FINAL REPORT

MARCH 1988

EVT 11-86

TRANSPORTABILITY TEST OF SURVIVABILITY OVERPACK CONTAINER (SOC)

VOLUME I OF II

Prepared for:
U.S. Army Armament, Munitions and Chemical Command
ATTN: AMSMC-MAY-P
Picatinny Arsenal, NJ 07806-5000

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The U.S. Army Defense Ammunition Center and School (USADACS) was requested by the U.S. Army Armament, Munitions and Chemical Command (AMCCOM) to conduct transportability testing of the Survivability Overpack Container (SOC). Loading/tiedown procedures for designated tactical vehicles were developed and tested for the SOC without castors, with solid rubber castors, with polyurethane castors and with phenolic castors.

The SOC was road tested on the M923 5-ton cargo truck, M871 semitrailer and Heavy Expanded Mobility Tactical Truck (HEMTT). The instrumentation, as desired, was recorded during the testing program.

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Savanna, IL 61074-9639

REPORT No. EVT 11-86

TRANSPORTABILITY TESTING OF THE SURVIVABILITY OVERPACK CONTAINER (SOC)

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PART 1

GENERAL

A. INTRODUCTION

The U.S. Army Defense Ammunition Center and School (USADACS) was requested by the U.S. Army Armament, Munitions and Chemical Command (AMCCOM) to conduct transportability testing of the Survivability Overpack Container (SOC). Methods of securing the SOC were designed, tested and evaluated.

The SOC is an overpack container for shipping and/or storage of three XM785 projectiles in their XM617 primary containers. Constructed of steel, the SOC provides the weapons with enhanced protection and security. The SOC has dimensions of 75-3/8 inches long, 52 inches wide and 34-13/32 inches high. The maximum gross weight is 3,500 pounds, based on a tare weight of 2,200 pounds and a payload of 1,300 pounds.

External features include a 5,000 pound pear-shaped combination tiedown/lifting ring near each corner. Additionally, there are eight forklift provisions to allow liftability from any side, stacking guides for possible stacking in storage, and a tow bar on the rear of the SOC.

The SOC has a caster mounting bracket on each corner to accommodate readily detachable casters. The SOC was tested with solid rubber, polyurethane, and phenolic material casters, along with casters removed.

Internally, the XM617 primary containers are retained in place by either of two alternative designs under consideration. The two alternative designs used to secure the two XM617 containers were each instrumented with two triaxial accelerometers.

Instrumentation was used to compare the forces induced on each container during the road test with the M923 5-ton truck, M871 semitrailer and HEMTT. The SOC was positioned laterally and longitudinally on each of the test vehicles.

B. AUTHORITY

Testing was accomplished in accordance with mission responsibilities delegated by the U.S. Army Armament, Munitions and Chemical Command (AMCCOM). Reference is made to the following:

(1) Change 4, 4 October 1974, to AR 740-1, 23 April 1973, Storage and Supply Activity Operations.

(2) AMCCOM-R 10-17, 13 January 1988, Mission and Major Functions of USADACS.

(3) Letter, AMSMC-TMD-S, AMCCOM, 17 July 1986, subject: Transportation Test of Survivability Overpack Container

C. OBJECTIVE

The objective of the tests was to develop/evaluate the loading/tie-down procedures and compare the forces induced on the payload from the different types of casters on the SOC while on the designated trucks and trailer.

D. CONCLUSIONS

(1) Inspection of the SOC following completion of the second test found failure of the right lock in the door.

(2) Visual inspection of the SOC following completion of the second test showed drooping, or sagging of the bottom corners under the door opening end of the SOC. The web strap tiedown assemblies pulling downward from the tiedown/lifting ring on each corner of the SOC forced the floor to deflect during testing.

(3) With the solid rubber casters under the SOC, locking the wheel brakes definitely aided in the restraining of the SOC.

(4) The tiedown procedures developed for the SOC on the 5-ton cargo truck, M871 semitrailer and HEMTT satisfied the USADACS test requirements.

(5) A SOC on solid rubber casters moved much less during the test than either the polyurethane or phenolic casters.

(6) Damage was sustained to the cargo floor of each test vehicle under the polyurethane and phenolic casters during testing. No permanent damage to the floor from rubber casters.

E. RECOMMENDATIONS

(1) Redesign locks in door of SOC to withstand the environment that is expected during transit.

(2) Redesign/strengthen the floor of the SOC to withstand expected forces.

(3) If solid rubber casters are used under the SOC, all wheel brakes should be engaged prior to movement.

(4) The SOC tiedown methods tested be adopted.

(5) Solid rubber casters are preferred over either the polyurethane or phenolic casters when developing tiedown procedures.

(6) Solid rubber casters are preferred over either the polyurethane or phenolic casters to prevent damage to the cargo floor of the transport vehicle.

PART 2
ATTENDEES
8-19 September 1986

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PART 3

ROAD TESTING PROCEDURES

Five separate road testing steps are required as identified herein:

1. Step No. 1. This step provides for the specimen load to be driven over a 200-foot-long segment of concrete paved road which consists of 2 series of railroad ties projecting 6 inches above the level of the road surface. This hazard course is traversed 2 times.

a. The first series of ties is spaced on 8-foot centers and alternately positioned on opposite sides of the road centerline for a distance of 50 feet.

b. Following the first series of ties, a paved roadway of 75 feet separates the first and second series of railroad ties.

c. The second series of ties is alternately positioned similarly to the first, but spaced on 10-foot centers for a distance of 50 feet.

d. The specimen load is driven across the hazard course at speeds that would produce the most violent vertical and side-to-side rolling reaction obtainable in traversing the hazard course (approximately 5 mph).

2. Step No. 2. This step consists of 30 miles of travel over available rough roads consisting of gravel, concrete and asphalt, curves, cattle gates, and stops and starts.

3. Step No. 3. This step provides for the specimen load to be subjected to 3 full air brake stops while traveling in the forward direction and 1 in the reverse direction while traveling down a 7 percent grade. The first 3 stops are at speeds of 5, 10, and 15 mph, while the stop in the reverse direction is of approximately 5 mph.

4. Step No. 4. This step consists of a repeat of that identified in Step No. 1, above.

5. Step No. 5. This step provides for the specimen load to be driven over a 300-foot-long segment of concrete paved road which has rails spaced on 26-1/2-inch centers and protruding 2 inches above the road surface. The specimen load was driven at the speed which will produce the most violent response.

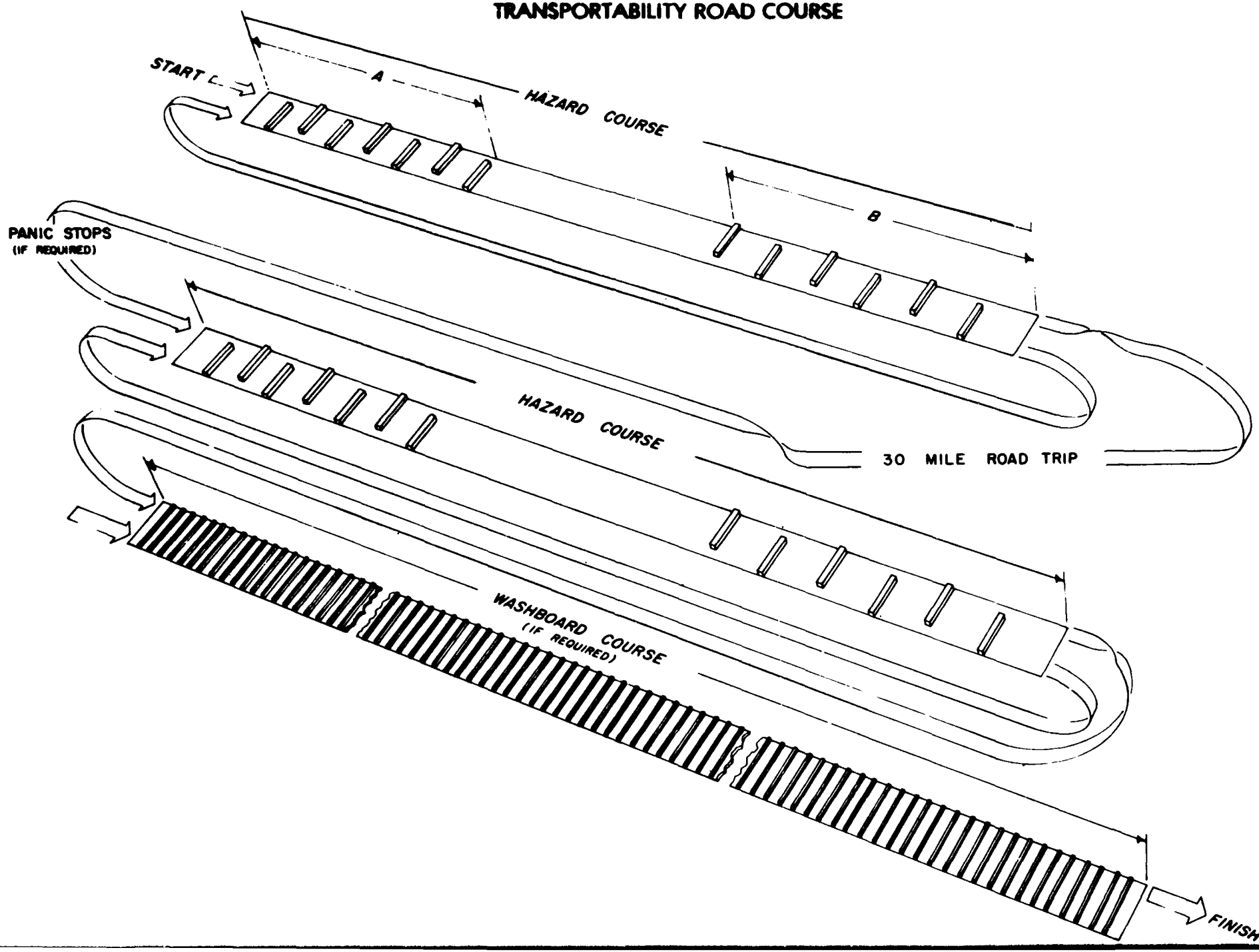
NOTE: Step Nos. 3 and 5 may be deleted at the discretion of the test conductor.

INSPECTIONS AND DATA COLLECTION

At selected intervals during testing, thorough inspections of the specimen loads will be made by technically proficient personnel to collect data on the specimen load and equipment resulting from above load test steps. These data are recorded in Part 4, following.

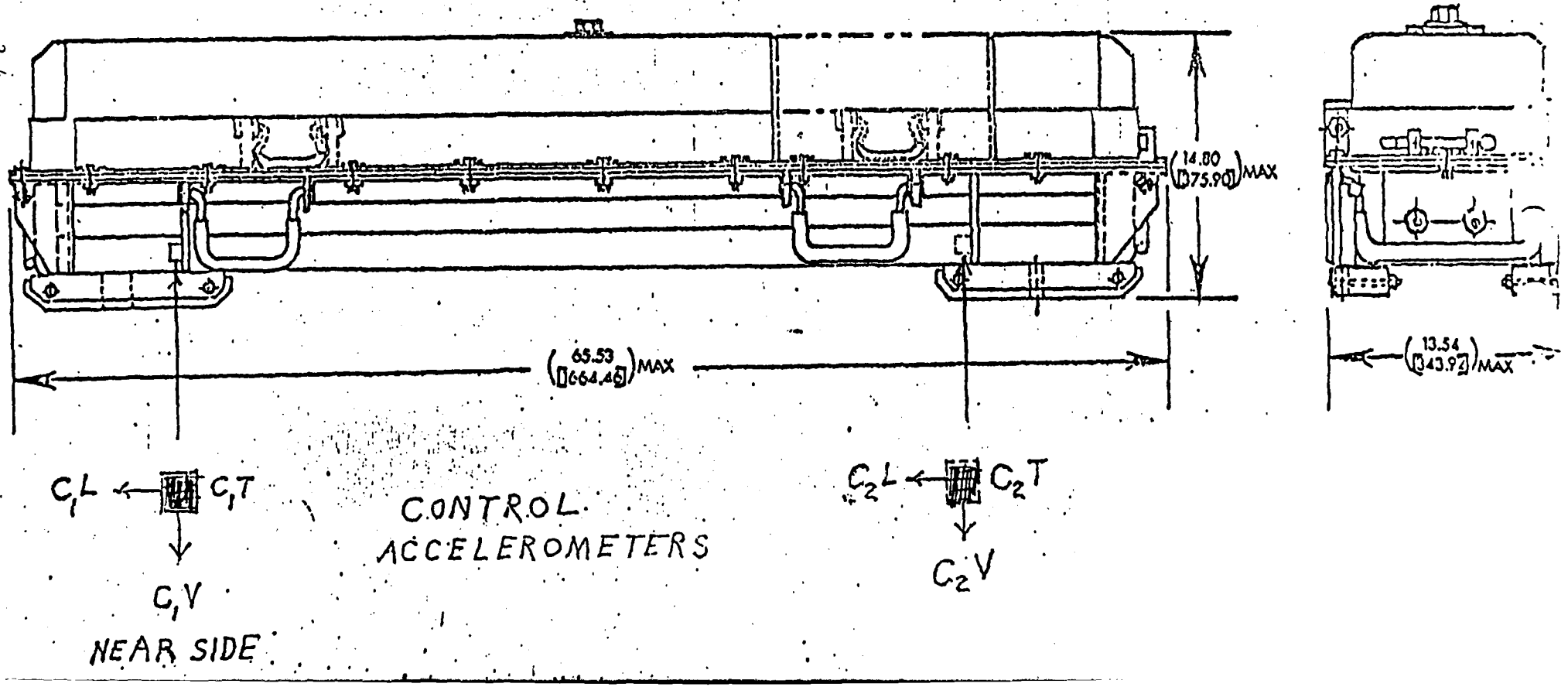
US ARMY DEFENSE AMMUNITION CENTER AND SCHOOL

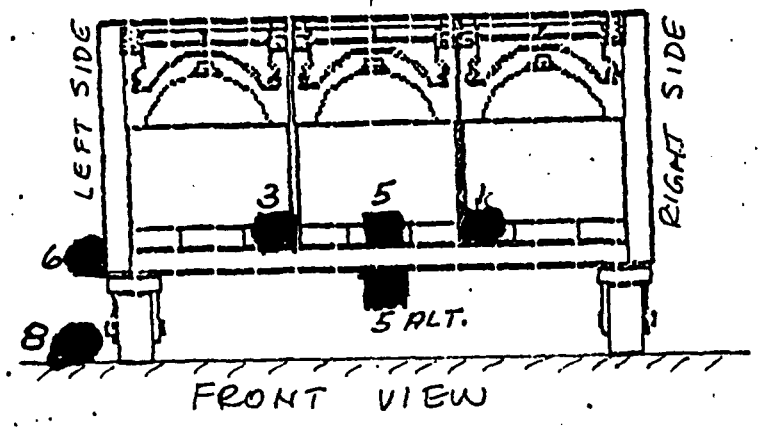
TRANSPORTABILITY ROAD COURSE

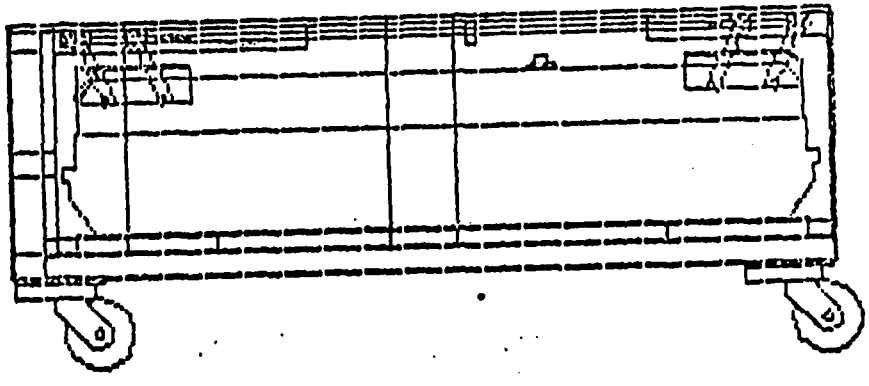


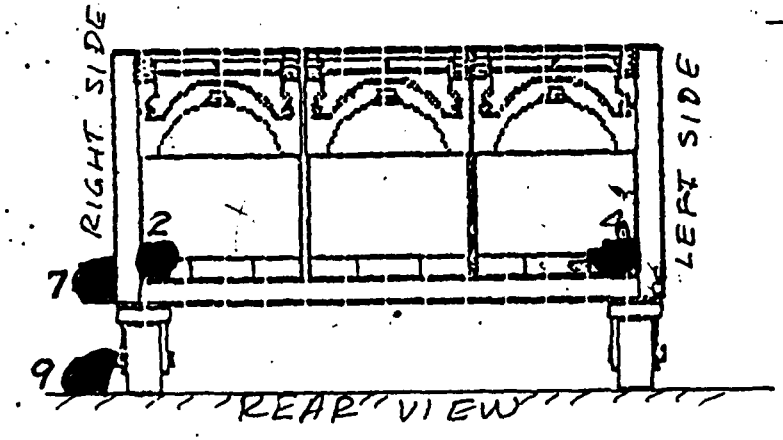
XM617 SHIPPING & STORAGE CONTAINER

LOCATION OF ACCELEROMETERS









ACCELEROMETER LOCATION

PART 4

LOAD SPECIMENS AND RESULTS

SYNOPSIS OF TEST NO. 1

In Test No. 1, the SOC on solid rubber casters was positioned lengthwise on the M923 5-ton cargo truck and driven over the USADACS road hazard course. The casters were free to swivel and the brakes on the casters were released.

The casters gave the appearance that the SOC was moving, but the casters were merely swiveling on the caster mounting plate. A single web strap tiedown assembly was used off each of four tiedown/lifting rings. An additional two web strap tiedown assemblies were used over the top of the SOC.

The test load in this configuration completed the entire road hazard course three (Nos. 1(a), 1(b), and 1(c))times. The vertical forces at the internal and external locations were recorded in the first complete road test. In the second test, the lateral forces were measured at the identical locations. In the third test, lateral forces were again measured, but all casters were locked into position (diagonally opposite casters were turned 90 degrees) and all brakes set.

ROAD TEST DATA

TEST NO. 1(a) DATE 10 September 1986

TEST SPECIMEN: SOC secured longitudinally on the M923 5-ton cargo truck. Vertical forces recorded. Total of six web strap tiedown assemblies were used with one from each tiedown ring and two over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES	6.00	SEC	5.68	MPH
PASS 1-B OVER SECOND SERIES OF TIES	5.85	SEC	5.83	MPH

REMARKS: SOC moved 1-1/2 inches sideways. Slight indentation on cargo floor under left front caster.

PASS 2-A OVER FIRST SERIES OF TIES	6.15	SEC	5.54	MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.45	SEC	5.29	MPH

REMARKS: No change

30 MILE ROAD TEST: No change

PANIC STOP TEST: During 5 mph panic stop container moved forward 1/8 inch.

PASS 3-A OVER FIRST SERIES OF TIES	6.30	SEC	5.41	MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.60	SEC	5.17	MPH

REMARKS: Caster swiveling under containers.

PASS 4-A OVER FIRST SERIES OF TIES	6.45	SEC	5.29	MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.45	SEC	5.29	MPH

REMARKS: No change

WASHBOARD COURSE: No change

TEST 1: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC ON CASTERS, LENGTHWISE ON 5-TON TRUCK)
DATE: 09-10-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.77	83.81	.09
PASS 1, COURSE B	5.50	1.25	76.59	.06
PASS 2, COURSE A	5.50	-1.79	94.98	.11
PASS 2, COURSE B	5.50	1.42	75.95	.06
PASS 3, COURSE A	5.50	1.80	84.87	.09
PASS 3, COURSE B	5.50	1.79	84.47	.08
PASS 4, COURSE A	5.50	1.81	86.14	.09
PASS 4, COURSE B	5.50	1.46	78.92	.06
WASHBOARD COURSE	5.50	2.10	89.55	.11

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.14	89.94	.06
PASS 1, COURSE B	5.50	-.99	114.07	.07
PASS 2, COURSE A	5.50	1.12	88.71	.06
PASS 2, COURSE B	5.50	-1.01	113.61	.07
PASS 3, COURSE A	5.50	1.17	88.61	.06
PASS 3, COURSE B	5.50	7.16	1085.18	.84
PASS 4, COURSE A	5.50	1.17	88.45	.06
PASS 4, COURSE B	5.50	1.03	99.73	.06
WASHBOARD COURSE	5.50	1.53	78.51	.07

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.49	84.67	.08
PASS 1, COURSE B	5.50	.98	72.23	.04
PASS 2, COURSE A	5.50	-1.42	92.93	.08
PASS 2, COURSE B	5.50	1.14	72.62	.05
PASS 3, COURSE A	5.50	-1.59	83.04	.08
PASS 3, COURSE B	5.50	1.80	491.84	.22
PASS 4, COURSE A	5.50	-1.56	90.24	.09
PASS 4, COURSE B	5.50	1.40	78.97	.06
WASHBOARD COURSE	5.50	1.85	94.37	.09

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.97	96.44	.11
PASS 1, COURSE B	5.50	-1.67	101.57	.10
PASS 2, COURSE A	5.50	1.90	104.28	.10
PASS 2, COURSE B	5.50	-1.62	104.05	.10
PASS 3, COURSE A	5.50	.76	95.19	.04
PASS 3, COURSE B	5.50	.75	93.89	.04
PASS 4, COURSE A	5.50	.80	93.79	.04
PASS 4, COURSE B	5.50	.69	83.25	.03
WASHBOARD COURSE	5.50	1.24	74.62	.05

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.97	93.17	.10
PASS 1, COURSE B	5.50	1.68	107.16	.11
PASS 2, COURSE A	5.50	-1.89	97.04	.10
PASS 2, COURSE B	5.50	1.68	108.32	.11
PASS 3, COURSE A	5.50	-2.00	92.95	.11
PASS 3, COURSE B	5.50	-2.00	92.92	.11
PASS 4, COURSE A	5.50	-1.96	96.96	.10
PASS 4, COURSE B	5.50	-1.72	92.91	.09
WASHBOARD COURSE	5.50	-2.63	76.72	.12

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.58	94.45	.10
PASS 1, COURSE B	5.50	1.00	75.71	.04
PASS 2, COURSE A	5.50	-1.53	105.88	.11
PASS 2, COURSE B	5.50	1.15	75.57	.05
PASS 3, COURSE A	5.50	-1.61	94.20	.11
PASS 3, COURSE B	5.50	-1.61	94.03	.11
PASS 4, COURSE A	5.50	-1.55	105.10	.11
PASS 4, COURSE B	5.50	1.45	84.29	.07
WASHBOARD COURSE	5.50	1.81	89.79	.10

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON LEFT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.50	91.01	.08
PASS 1, COURSE B	5.50	-1.42	123.31	.10
PASS 2, COURSE A	5.50	-1.55	87.94	.08
PASS 2, COURSE B	5.50	-1.41	124.39	.10
PASS 3, COURSE A	5.50	-1.56	88.53	.08
PASS 3, COURSE B	5.50	-1.57	88.75	.08
PASS 4, COURSE A	5.50	-1.65	89.08	.09
PASS 4, COURSE B	5.50	-1.50	124.91	.11
WASHBOARD COURSE	5.50	2.06	86.54	.10

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.66	103.64	.11
PASS 1, COURSE B	5.50	-.96	121.47	.08
PASS 2, COURSE A	5.50	-1.56	120.07	.12
PASS 2, COURSE B	5.50	.95	76.64	.04
PASS 3, COURSE A	5.50	-1.67	106.17	.12
PASS 3, COURSE B	5.50	-1.67	106.23	.12
PASS 4, COURSE A	5.50	-1.61	117.24	.13
PASS 4, COURSE B	5.50	1.27	83.40	.06
WASHBOARD COURSE	5.50	1.65	85.10	.08

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.46	101.53	.09
PASS 1, COURSE B	5.50	-1.44	128.79	.11
PASS 2, COURSE A	5.50	-1.52	99.78	.09
PASS 2, COURSE B	5.50	-1.46	127.25	.11
PASS 3, COURSE A	5.50	1.35	77.10	.06
PASS 3, COURSE B	5.50	-1.50	127.41	.11
PASS 4, COURSE A	5.50	-1.57	95.95	.09
PASS 4, COURSE B	5.50	-1.53	129.06	.11
WASHBOARD COURSE	5.50	1.87	92.72	.10

ROAD TEST DATA

TEST NO. 1(b) DATE 10 September 1986

TEST SPECIMEN: SOC secured longitudinally on the M923 5-ton cargo truck. Lateral forces recorded.

PASS 1-A OVER FIRST SERIES OF TIES	6.60	SEC	5.17	MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.45	SEC	5.29	MPH

REMARKS: Moved 1-1/2 inches side-to-side and 1 inch forward and rearward.

PASS 2-A OVER FIRST SERIES OF TIES	6.30	SEC	5.41	MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.75	SEC	5.05	MPH

REMARKS: No change

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES	6.60	SEC	5.17	MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.60	SEC	5.17	MPH

REMARKS: No change

PASS 4-A OVER FIRST SERIES OF TIES	6.75	SEC	5.05	MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.30	SEC	5.41	MPH

REMARKS: No change

WASHBOARD COURSE: Lock mechanism on right side failed.

TEST 2: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC ON CASTERS, LENGTHWISE ON 5-TON TRUCK)
DATE: 09-10-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.11	114.75	.08
PASS 1, COURSE B	5.50	-2.08	68.18	.08
PASS 2, COURSE A	5.50	-1.11	112.01	.07
PASS 2, COURSE B	5.50	-.76	117.92	.06
PASS 3, COURSE A	5.50	-1.14	104.67	.07
PASS 3, COURSE B	5.50	-.75	112.97	.05
PASS 4, COURSE A	5.50	-1.11	105.48	.07
PASS 4, COURSE B	5.50	-.76	111.90	.05
WASHBOARD COURSE	5.50	-.51	72.72	.02

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.48	131.37	.11
PASS 1, COURSE B	5.50	1.01	118.40	.07
PASS 2, COURSE A	5.50	-1.49	131.99	.11
PASS 2, COURSE B	5.50	1.03	106.34	.06
PASS 3, COURSE A	5.50	-1.52	124.45	.11
PASS 3, COURSE B	5.50	-1.03	101.34	.06
PASS 4, COURSE A	5.50	-1.50	128.15	.12
PASS 4, COURSE B	5.50	-1.02	90.59	.05
WASHBOARD COURSE	5.50	-.57	78.42	.03

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.16	114.37	.08
PASS 1, COURSE B	5.50	.80	117.98	.06
PASS 2, COURSE A	5.50	1.17	111.58	.08
PASS 2, COURSE B	5.50	.82	117.97	.06
PASS 3, COURSE A	5.50	1.17	103.29	.07
PASS 3, COURSE B	5.50	.76	111.14	.05
PASS 4, COURSE A	5.50	1.14	104.63	.07
PASS 4, COURSE B	5.50	.78	112.32	.05
WASHBOARD COURSE	5.50	-.37	82.18	.02

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.22	107.47	.08
PASS 1, COURSE B	5.50	-.88	107.17	.05
PASS 2, COURSE A	5.50	-1.28	101.47	.08
PASS 2, COURSE B	5.50	-.90	102.85	.05
PASS 3, COURSE A	5.50	-1.29	109.29	.08
PASS 3, COURSE B	5.50	-.84	90.88	.04
PASS 4, COURSE A	5.50	-1.21	109.87	.08
PASS 4, COURSE B	5.50	-.85	83.52	.04
WASHBOARD COURSE	5.50	-.38	74.49	.02

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.32	106.47	.08
PASS 1, COURSE B	5.50	.94	98.67	.05
PASS 2, COURSE A	5.50	1.33	112.04	.09
PASS 2, COURSE B	5.50	.96	94.89	.05
PASS 3, COURSE A	5.50	1.33	104.02	.08
PASS 3, COURSE B	5.50	.93	82.38	.04
PASS 4, COURSE A	5.50	1.29	101.58	.08
PASS 4, COURSE B	5.50	-.89	82.37	.04
WASHBOARD COURSE	5.50	-.40	74.20	.02

TAPE CHANNEL 7 : LATERAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.25	111.44	.08
PASS 1, COURSE B	5.50	.90	120.39	.07
PASS 2, COURSE A	5.50	1.26	116.18	.09
PASS 2, COURSE B	5.50	.88	120.60	.06
PASS 3, COURSE A	5.50	1.27	106.35	.08
PASS 3, COURSE B	5.50	.88	114.41	.06
PASS 4, COURSE A	5.50	1.25	106.69	.08
PASS 4, COURSE B	5.50	.87	112.28	.06
WASHBOARD COURSE	5.50	-.39	85.69	.02

TAPE CHANNEL 8 : LATERAL ACCELERATION ON LEFT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.13	137.08	.09
PASS 1, COURSE B	5.50	.75	120.43	.05
PASS 2, COURSE A	5.50	-1.13	128.59	.08
PASS 2, COURSE B	5.50	-.80	109.84	.05
PASS 3, COURSE A	5.50	-1.11	117.91	.08
PASS 3, COURSE B	5.50	.73	100.64	.04
PASS 4, COURSE A	5.50	1.08	131.60	.09
PASS 4, COURSE B	5.50	.76	98.92	.04
WASHBOARD COURSE	5.50	.40	81.52	.02

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.98	117.12	.07
PASS 1, COURSE B	5.50	-.58	116.21	.04
PASS 2, COURSE A	5.50	-.95	115.51	.06
PASS 2, COURSE B	5.50	-.57	104.89	.04
PASS 3, COURSE A	5.50	-.99	112.09	.07
PASS 3, COURSE B	5.50	-.56	106.36	.03
PASS 4, COURSE A	5.50	-.96	118.77	.07
PASS 4, COURSE B	5.50	-.57	117.74	.04
WASHBOARD COURSE	5.50	.25	63.47	.01

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.87	115.51	.06
PASS 1, COURSE B	5.50	-.57	85.51	.03
PASS 2, COURSE A	5.50	.87	136.61	.07
PASS 2, COURSE B	5.50	-.58	87.19	.03
PASS 3, COURSE A	5.50	-.90	118.75	.07
PASS 3, COURSE B	5.50	-.52	92.58	.03
PASS 4, COURSE A	5.50	.87	133.61	.07
PASS 4, COURSE B	5.50	-.53	85.03	.03
WASHBOARD COURSE	5.50	-.32	115.21	.02

ROAD TEST DATA

TEST NO. 1(c) DATE: 10 September 1987

TEST SPECIMEN: SOC secured longitudinally on the M923 5-ton cargo truck. All casters were locked and two diagonally opposite casters were turned 90 degrees and locked. All brakes were locked.

PASS 1-A OVER FIRST SERIES OF TIES	6.60	SEC	5.17	MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.45	SEC	5.29	MPH

REMARKS: SOC moved forward 1/8 inch. Locking casters and setting brakes assisted helping retain the SOC.

PASS 2-A OVER FIRST SERIES OF TIES	6.75	SEC	5.05	MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.30	SEC	5.41	MPH

REMARKS: Front of SOC moved right 1-4 inch.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES	6.75	SEC	5.05	MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.60	SEC	5.17	MPH

REMARKS: No change

PASS 4-A OVER FIRST SERIES OF TIES	6.60	SEC	5.17	MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.30	SEC	5.41	MPH

REMARKS: No change

WASHBOARD COURSE: No change

TEST 2A: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC ON LOCKED CASTERS, LENGTHWISE ON 5-TON TRUCK)
DATE: 09-10-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.36	80.39	.06
PASS 1, COURSE B	5.50	-1.67	68.27	.07
PASS 2, COURSE A	5.50	-1.05	122.80	.08
PASS 2, COURSE B	5.50	-.74	90.27	.04
PASS 3, COURSE A	5.50	1.05	113.70	.07
PASS 3, COURSE B	5.50	-.75	92.97	.04
PASS 4, COURSE A	5.50	1.07	113.47	.07
PASS 4, COURSE B	5.50	.75	108.21	.05
WASHBOARD COURSE	5.50	-.40	67.67	.02

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.65	127.20	.13
PASS 1, COURSE B	5.50	1.24	97.01	.07
PASS 2, COURSE A	5.50	-1.62	129.02	.12
PASS 2, COURSE B	5.50	1.25	98.14	.07
PASS 3, COURSE A	5.50	-1.60	126.08	.11
PASS 3, COURSE B	5.50	1.30	96.96	.08
PASS 4, COURSE A	5.50	-1.56	131.97	.12
PASS 4, COURSE B	5.50	1.33	96.34	.07
WASHBOARD COURSE	5.50	-.46	75.74	.02

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.12	114.80	.07
PASS 1, COURSE B	5.50	-.73	106.33	.05
PASS 2, COURSE A	5.50	1.10	115.58	.07
PASS 2, COURSE B	5.50	-.75	112.54	.05
PASS 3, COURSE A	5.50	-1.06	112.86	.07
PASS 3, COURSE B	5.50	.77	94.88	.04
PASS 4, COURSE A	5.50	-1.07	112.88	.07
PASS 4, COURSE B	5.50	-.77	108.69	.05
WASHBOARD COURSE	5.50	.39	64.88	.01

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.46	104.03	.09
PASS 1, COURSE B	5.50	-1.06	94.33	.06
PASS 2, COURSE A	5.50	1.34	115.36	.09
PASS 2, COURSE B	5.50	-1.06	88.95	.05
PASS 3, COURSE A	5.50	1.29	123.50	.09
PASS 3, COURSE B	5.50	-1.14	94.18	.06
PASS 4, COURSE A	5.50	-1.33	108.13	.08
PASS 4, COURSE B	5.50	-1.12	95.80	.06
WASHBOARD COURSE	5.50	-.52	59.77	.02

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.49	120.11	.10
PASS 1, COURSE B	5.50	1.11	92.27	.06
PASS 2, COURSE A	5.50	-1.46	118.56	.10
PASS 2, COURSE B	5.50	1.14	93.49	.06
PASS 3, COURSE A	5.50	-1.41	115.57	.09
PASS 3, COURSE B	5.50	1.19	92.78	.07
PASS 4, COURSE A	5.50	-1.39	120.46	.10
PASS 4, COURSE B	5.50	1.20	91.44	.06
WASHBOARD COURSE	5.50	.44	56.24	.01

TAPE CHANNEL 7 : LATERAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.22	117.25	.09
PASS 1, COURSE B	5.50	-.81	124.54	.06
PASS 2, COURSE A	5.50	1.17	122.01	.08
PASS 2, COURSE B	5.50	-.83	121.76	.06
PASS 3, COURSE A	5.50	-1.19	123.02	.09
PASS 3, COURSE B	5.50	.82	95.84	.04
PASS 4, COURSE A	5.50	-1.19	123.06	.09
PASS 4, COURSE B	5.50	-.83	113.96	.06
WASHBOARD COURSE	5.50	.39	70.29	.02

TAPE CHANNEL 8 : LATERAL ACCELERATION ON LEFT OUTSIDE OF SOC

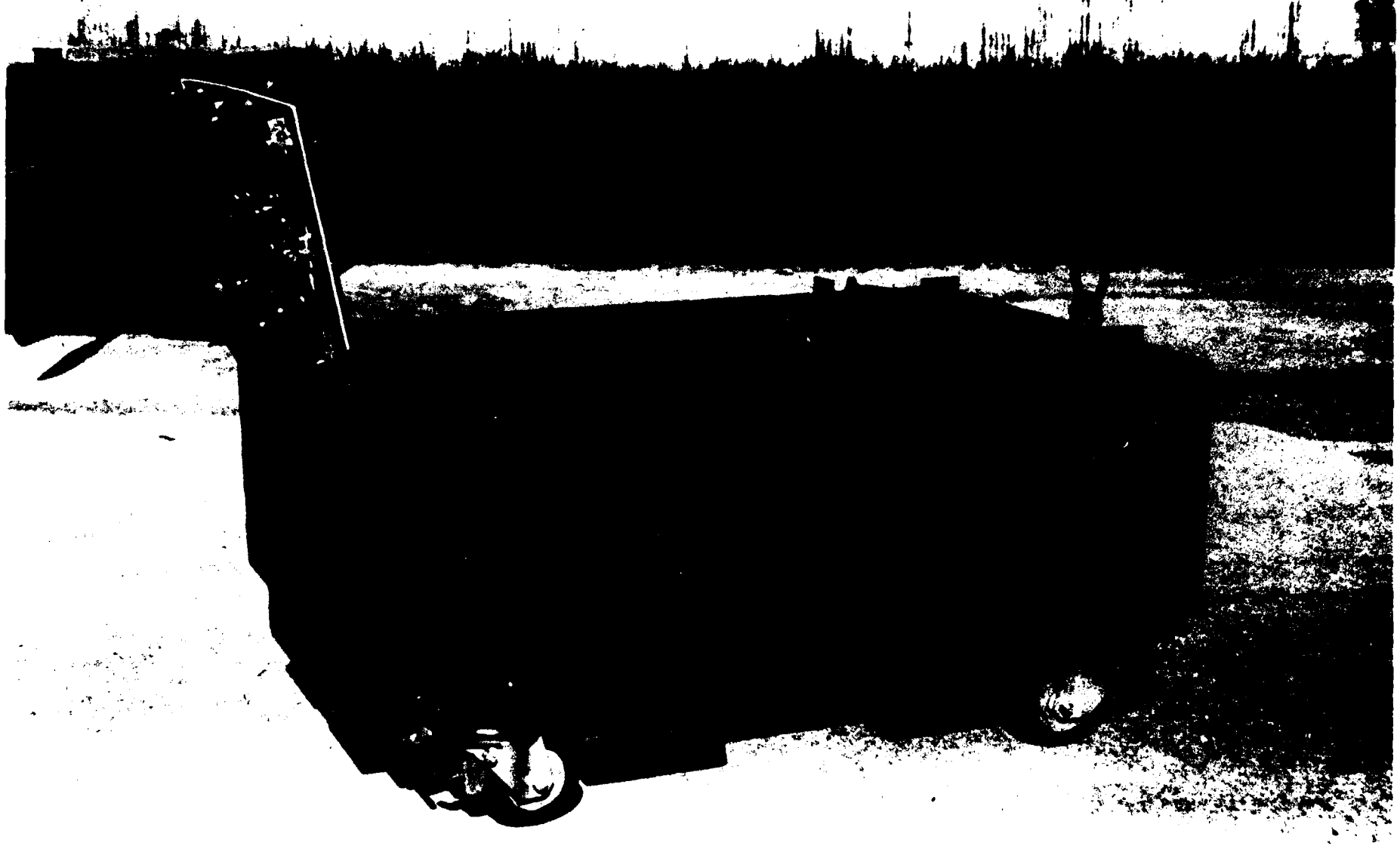
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.22	131.11	.09
PASS 1, COURSE B	5.50	-.88	96.46	.05
PASS 2, COURSE A	5.50	1.20	131.50	.09
PASS 2, COURSE B	5.50	-.95	104.27	.06
PASS 3, COURSE A	5.50	1.17	129.57	.09
PASS 3, COURSE B	5.50	-.92	104.15	.06
PASS 4, COURSE A	5.50	1.17	126.42	.08
PASS 4, COURSE B	5.50	-1.04	104.53	.06
WASHBOARD COURSE	5.50	-.39	69.05	.01

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

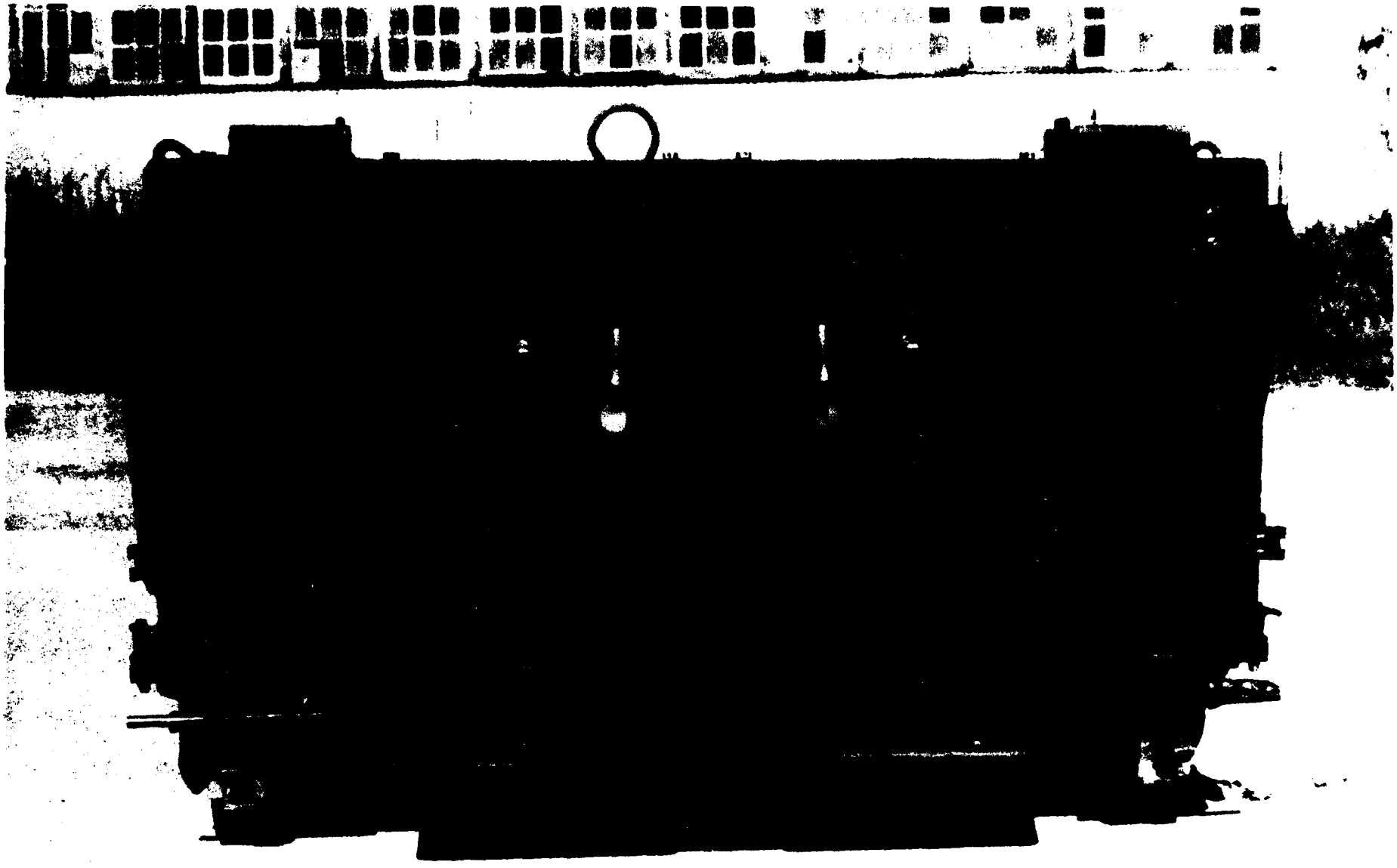
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.87	157.18	.08
PASS 1, COURSE B	5.50	-.60	126.06	.04
PASS 2, COURSE A	5.50	-.85	159.31	.08
PASS 2, COURSE B	5.50	-.63	121.85	.05
PASS 3, COURSE A	5.50	-.84	150.89	.08
PASS 3, COURSE B	5.50	-.60	119.78	.04
PASS 4, COURSE A	5.50	-.85	148.50	.08
PASS 4, COURSE B	5.50	-.62	123.55	.05
WASHBOARD COURSE	5.50	-.20	87.45	.01

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

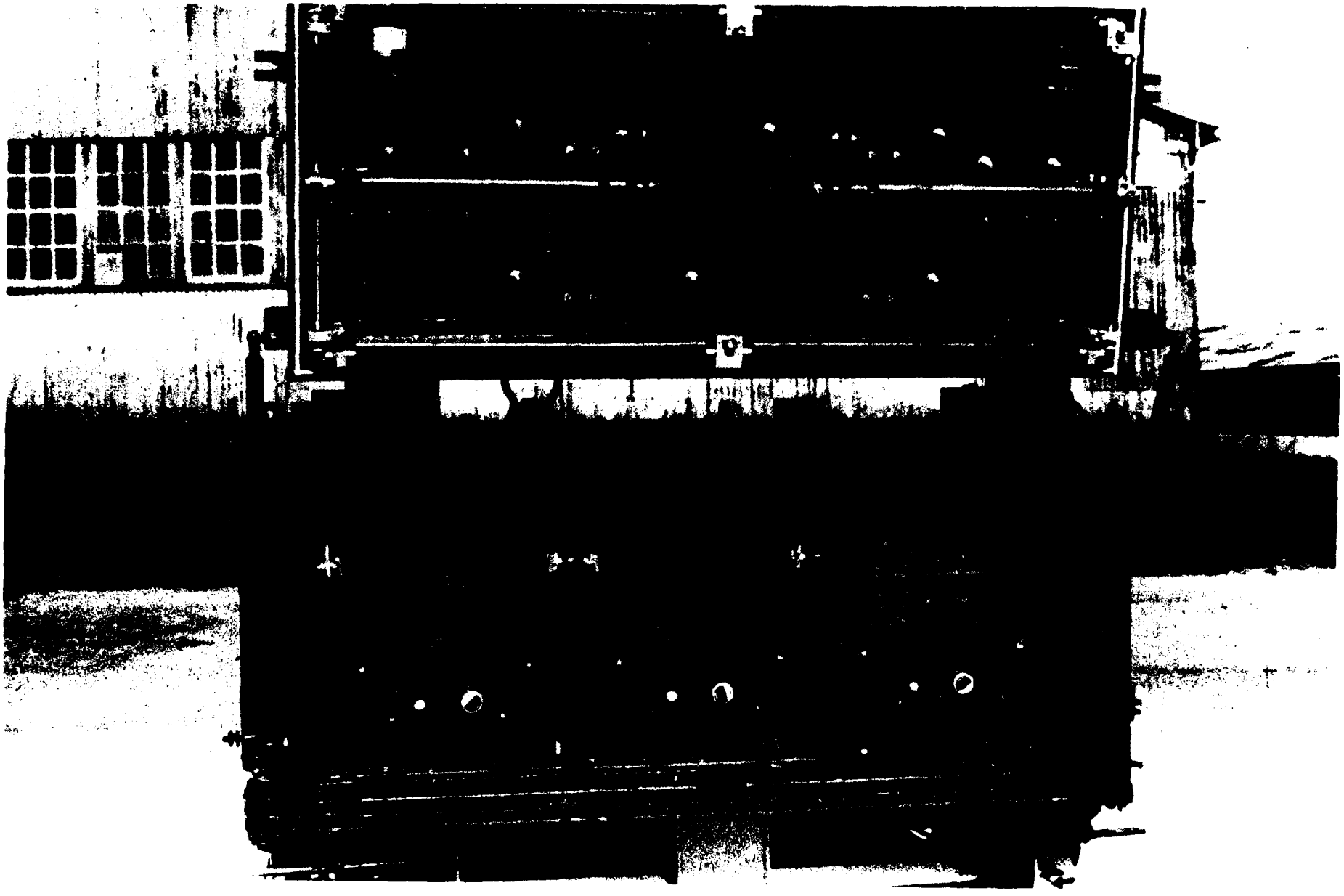
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.88	145.71	.08
PASS 1, COURSE B	5.50	-.54	153.73	.05
PASS 2, COURSE A	5.50	.85	145.80	.08
PASS 2, COURSE B	5.50	-.58	170.48	.05
PASS 3, COURSE A	5.50	.83	149.32	.07
PASS 3, COURSE B	5.50	-.55	152.16	.05
PASS 4, COURSE A	5.50	.85	148.69	.08
PASS 4, COURSE B	5.50	-.59	150.72	.05
WASHBOARD COURSE	5.50	-.26	62.96	.01



	DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL	
Photo 1. View of SOC on solid rubber casters with door in open position.		



	DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL	
Photo 2. View of forward end of SOC with door closed, but lever handles not in locked position.		

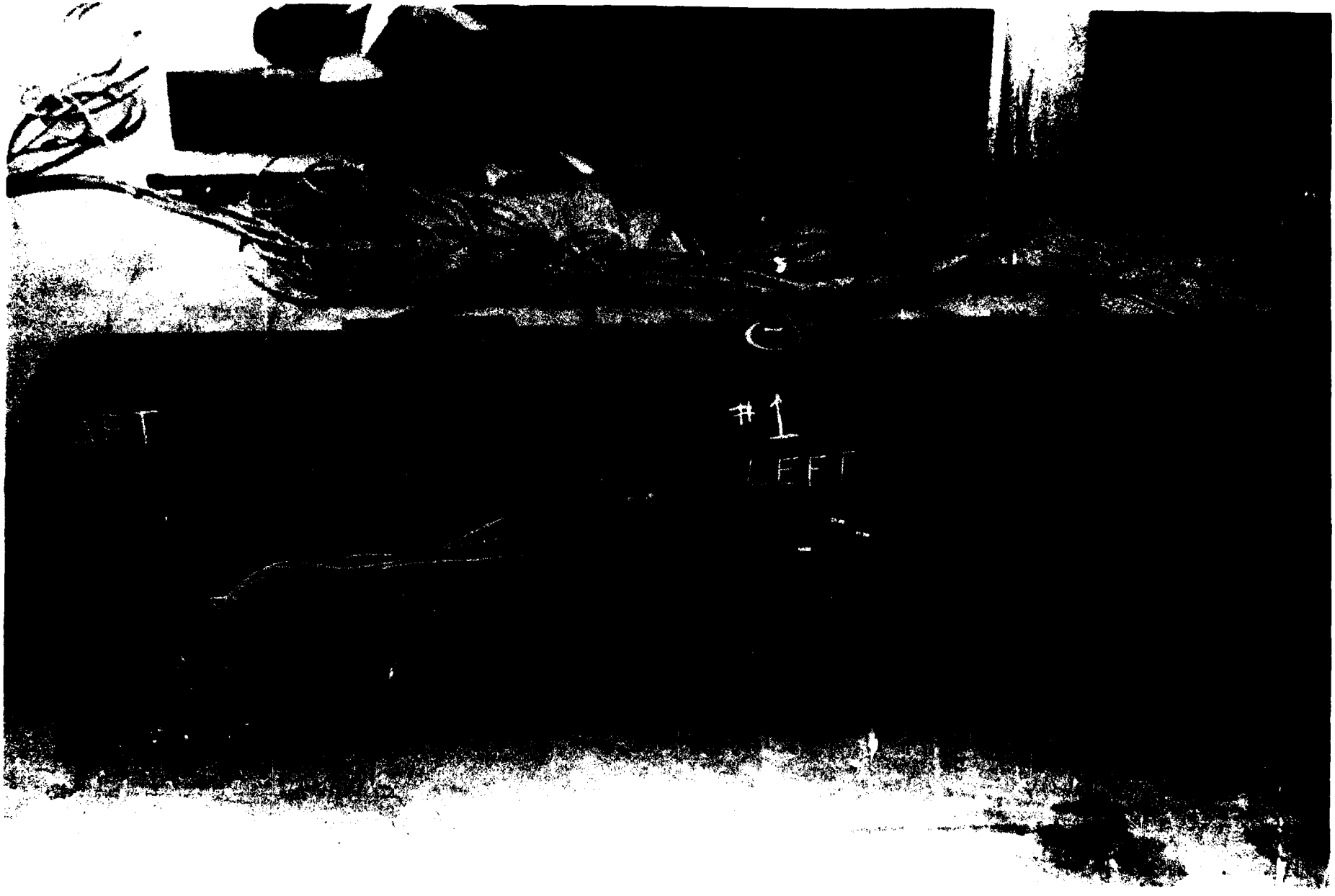


DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL

Photo 3. View of forward end of SOC showing the three XM617 primary containers in place.

DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 4. View of the right side of the XM617 primary (right) container showing the triaxial accelerometer mounted on the skid.



	DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL	

Photo 5. View of the left side of the XM617 primary (right) container showing the triaxial accelerometer mounted on the skid.

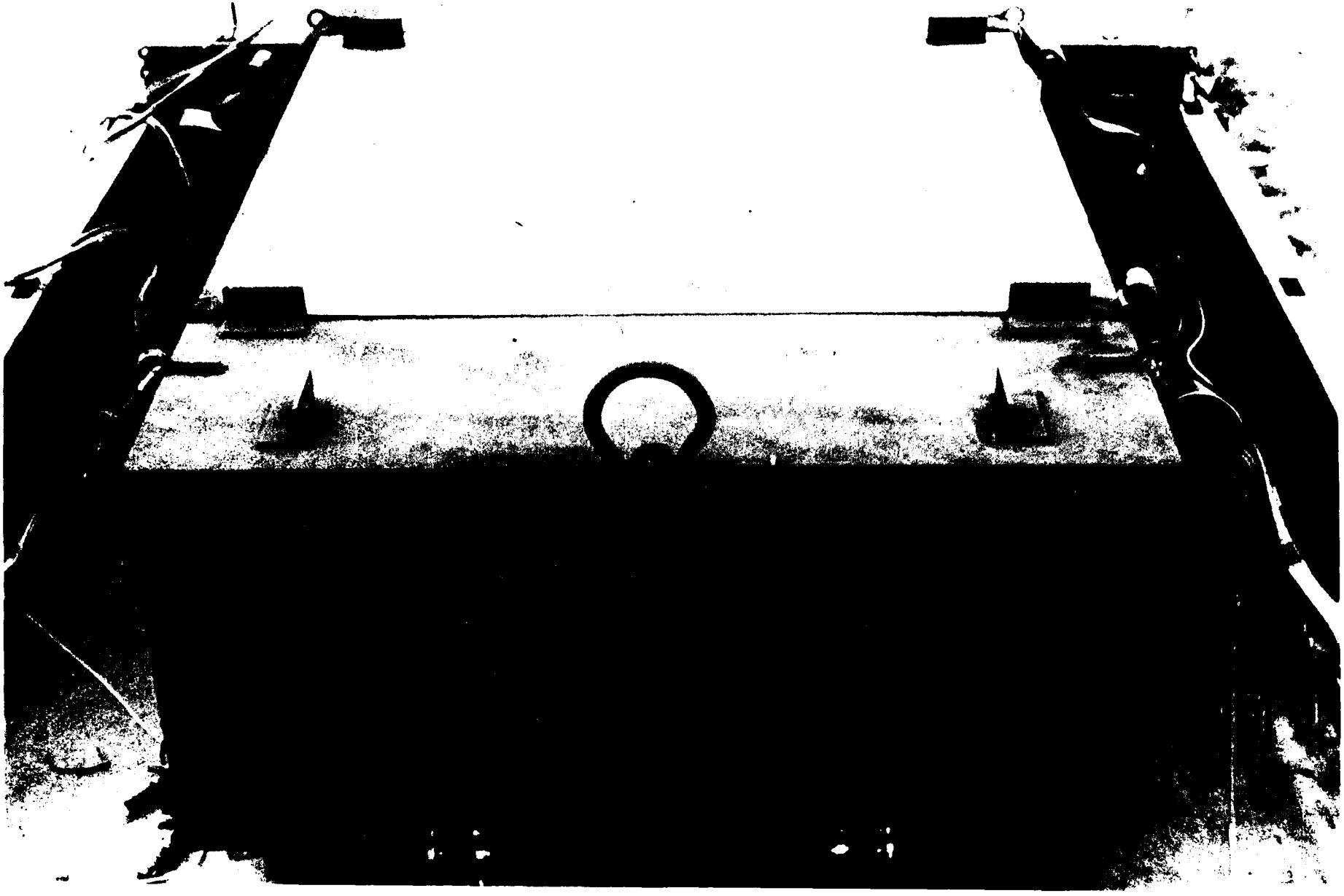
DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL

Photo 6. View of the right side of the XM617 primary (left) container showing the triaxial accelerometer mounted on the skid.

DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 7. View of the left side of the XM617 primary (left) container showing the triaxial accelerometer mounted on the skid.

DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL
Photo 8. View of the SOC positioned longitudinally on the M923 5-ton cargo truck.



DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL

Photo 9. View of the SOC secured with web strap tiedown assemblies on the bed of the M923 5-ton cargo truck. Note accelerometer mounted on the deck of the 5-ton cargo truck.

SYNOPSIS OF TEST NO. 2

In Test No. 2, the casters were removed from the SOC. The SOC was positioned lengthwise on the M923 5-ton cargo truck and secured with a single web strap tiedown assembly from each of four tiedown/lift rings. An additional two web strap tiedown assemblies were used over the top of the SOC.

The test load in the cargo truck completed the road course twice. In the first complete test, the lateral forces were measured at designated internal and external SOC locations. In the second test vertical forces were measured at the identical locations.

Both securement methods satisfactorily met the test criteria.

ROAD TEST DATA

TEST NO. 2(a) DATE: 10-11 Sep 86

TEST SPECIMEN: SOC, with casters removed, secured longitudinally on the M923 5-ton cargo truck. Lateral forces recorded. Total of six web strap tiedown assemblies used with one from each tiedown ring and two over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES	6.75 SEC	5.05 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

30 MILE ROAD TEST: No movement. Noticed 1/4" sag on bottom right corner under the door.

PANIC STOP TEST: No movement

PASS 3-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.90 SEC	4.94 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.90 SEC	4.94 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 3: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC WITHOUT CASTERS, LENGTHWISE ON 5-TON TRUCK)
DATE: 09-10&11-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.95	127.71	.07
PASS 1, COURSE B	5.50	-.94	125.03	.07
PASS 2, COURSE A	5.50	.94	126.51	.07
PASS 2, COURSE B	5.50	-.69	111.95	.05
PASS 3, COURSE A	5.50	.86	117.11	.06
PASS 3, COURSE B	5.50	.65	111.93	.04
PASS 4, COURSE A	5.50	.87	122.39	.06
PASS 4, COURSE B	5.50	-.64	115.59	.04
WASHBOARD COURSE	5.50	-.26	68.14	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.28	126.04	.09
PASS 1, COURSE B	5.50	1.31	128.14	.10
PASS 2, COURSE A	5.50	1.27	124.50	.09
PASS 2, COURSE B	5.50	-1.09	141.93	.09
PASS 3, COURSE A	5.50	1.27	110.46	.08
PASS 3, COURSE B	5.50	.97	120.01	.07
PASS 4, COURSE A	5.50	1.22	113.85	.08
PASS 4, COURSE B	5.50	1.01	130.76	.08
WASHBOARD COURSE	5.50	-.28	84.43	.01

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.93	124.36	.07
PASS 1, COURSE B	5.50	-.91	144.24	.08
PASS 2, COURSE A	5.50	-.95	130.05	.07
PASS 2, COURSE B	5.50	.70	111.56	.05
PASS 3, COURSE A	5.50	-.86	110.50	.06
PASS 3, COURSE B	5.50	-.64	128.62	.05
PASS 4, COURSE A	5.50	-.88	113.78	.06
PASS 4, COURSE B	5.50	-.63	111.08	.04
WASHBOARD COURSE	5.50	.26	67.06	.01

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.05	119.57	.07
PASS 1, COURSE B	5.50	-1.09	123.26	.08
PASS 2, COURSE A	5.50	-1.08	122.42	.08
PASS 2, COURSE B	5.50	-.85	135.71	.07
PASS 3, COURSE A	5.50	-1.04	110.13	.07
PASS 3, COURSE B	5.50	-.79	127.93	.06
PASS 4, COURSE A	5.50	-.97	115.20	.07
PASS 4, COURSE B	5.50	-.81	99.66	.05
WASHBOARD COURSE	5.50	-.23	75.81	.01

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.08	120.59	.08
PASS 1, COURSE B	5.50	1.10	122.79	.08
PASS 2, COURSE A	5.50	1.09	121.53	.08
PASS 2, COURSE B	5.50	-.88	146.72	.07
PASS 3, COURSE A	5.50	1.06	104.64	.07
PASS 3, COURSE B	5.50	.87	96.80	.05
PASS 4, COURSE A	5.50	.99	109.25	.07
PASS 4, COURSE B	5.50	.89	95.42	.05
WASHBOARD COURSE	5.50	.29	85.28	.01

TAPE CHANNEL 7 : LATERAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.04	136.47	.09
PASS 1, COURSE B	5.50	1.00	120.76	.07
PASS 2, COURSE A	5.50	-1.02	139.59	.09
PASS 2, COURSE B	5.50	-.74	124.88	.05
PASS 3, COURSE A	5.50	-.94	128.41	.07
PASS 3, COURSE B	5.50	.70	133.44	.05
PASS 4, COURSE A	5.50	-.95	124.81	.07
PASS 4, COURSE B	5.50	-.68	127.52	.05
WASHBOARD COURSE	5.50	-.23	125.51	.01

TAPE CHANNEL 8 : LATERAL ACCELERATION ON LEFT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.96	132.90	.08
PASS 1, COURSE B	5.50	-.93	125.21	.07
PASS 2, COURSE A	5.50	-.95	128.31	.07
PASS 2, COURSE B	5.50	-.78	142.71	.07
PASS 3, COURSE A	5.50	.90	158.98	.08
PASS 3, COURSE B	5.50	.74	151.80	.06
PASS 4, COURSE A	5.50	.82	157.26	.07
PASS 4, COURSE B	5.50	-.83	135.35	.07
WASHBOARD COURSE	5.50	-.24	88.50	.01

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.94	137.28	.08
PASS 1, COURSE B	5.50	-.87	147.51	.08
PASS 2, COURSE A	5.50	-.92	139.02	.08
PASS 2, COURSE B	5.50	-.67	124.73	.05
PASS 3, COURSE A	5.50	-.88	129.29	.07
PASS 3, COURSE B	5.50	.62	132.16	.05
PASS 4, COURSE A	5.50	-.88	127.35	.07
PASS 4, COURSE B	5.50	-.60	123.63	.04
WASHBOARD COURSE	5.50	.20	73.15	.01

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.85	168.20	.08
PASS 1, COURSE B	5.50	.72	144.84	.06
PASS 2, COURSE A	5.50	.86	167.28	.09
PASS 2, COURSE B	5.50	.75	143.43	.06
PASS 3, COURSE A	5.50	.85	148.95	.07
PASS 3, COURSE B	5.50	.68	145.70	.06
PASS 4, COURSE A	5.50	.77	166.47	.08
PASS 4, COURSE B	5.50	-.68	129.60	.05
WASHBOARD COURSE	5.50	-.20	87.94	.01

ROAD TEST DATA

TEST NO. 2(b) DATE: 11 Sep 86

TEST SPECIMEN: Same as Test 2(a), except vertical forces measured.

PASS 1-A OVER FIRST SERIES OF TIES	6.90 SEC	4.94 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES	6.75 SEC	5.05 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

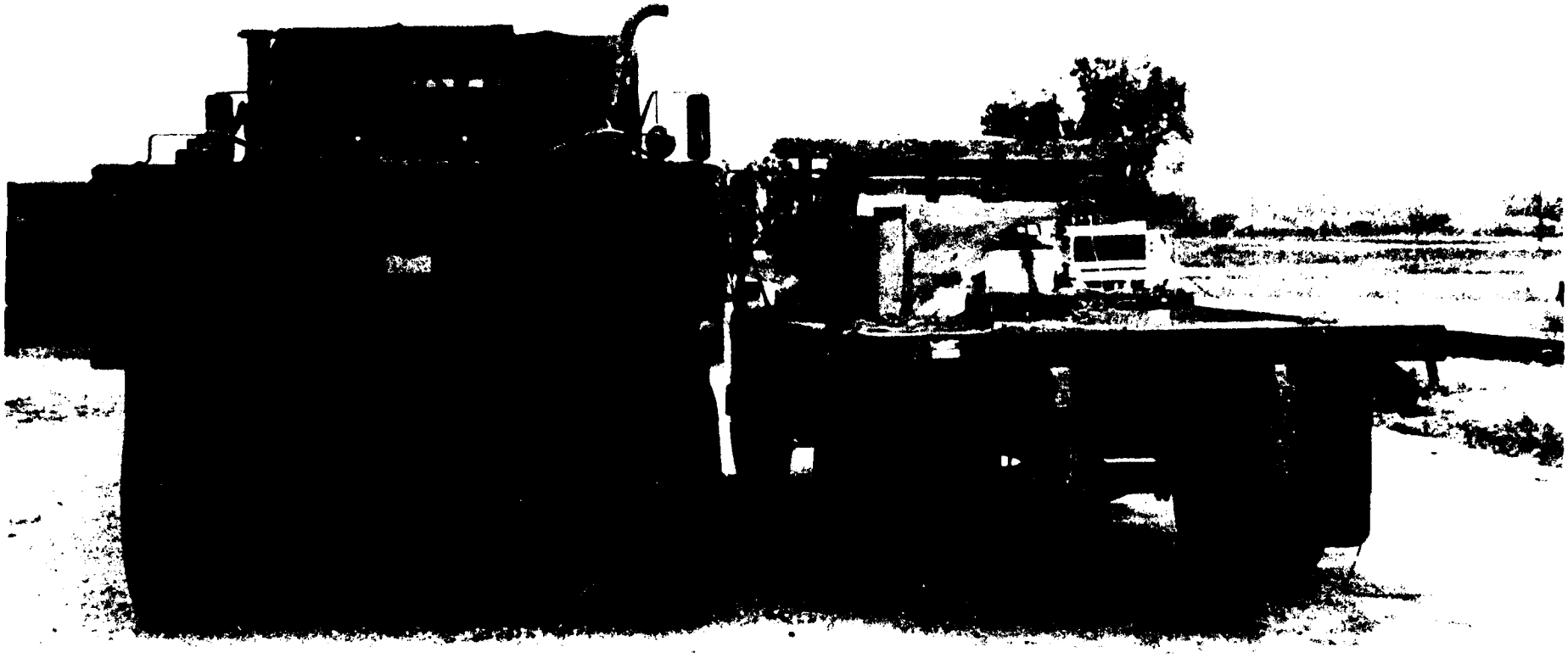
PASS 3-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.90 SEC	4.94 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.45 SEC	5.29 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement



	DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL	

Photo 10. View of SOC without castors in M923 5-ton cargo truck and adjacent truck transport instrumentation package.

DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL

Photo 11. View of SOC without casters in M923 5-ton truck. Note accelerometers on the side of the SOC and floor of the 5-ton truck adjusted for lateral force measurement.

SYNOPSIS OF TEST 3

In Test No. 3, the SOC on solid rubber castors was positioned laterally on the M923 5-ton cargo truck and driven over the USADACS road hazard course. All casters were locked into position (diagonally opposite casters were turned 90 degrees) and all brakes set.

In the first road test, vertical forces were measured at internal and external locations of the SOC. The second test measured the longitudinal forces at the identical locations.

From the results of this test, it appears that locking the swiveling casters has very little affect in retaining the SOC. However, the locking of all wheel brakes definitely aided in curtailing the movement of the secured SOC.

ROAD TEST DATA

TEST NO. 3(a) DATE: 11 Sep 86

TEST SPECIMEN: SOC on locked casters and secured laterally on the M923 5-ton cargo truck. Vertical forces recorded. Total of six web strap tiedown assemblies were used with one from each tiedown ring and two over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: SOC moved 1/4 inch to the rear.

PASS 2-A OVER FIRST SERIES OF TIES	6.90 SEC	4.94 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: SOC moved 1/2 inch to the left.

30 MILE ROAD TEST: No movement

PANIC STOP TEST: No movement

PASS 3-A OVER FIRST SERIES OF TIES	6.75 SEC	5.05 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.75 SEC	5.05 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.75 SEC	5.05 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 5: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC ON CASTERS, LOCKED, BRACED, & ORIENTED)
(CROSSWISE ON 5-TON TRUCK) DATE: 09-11-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.42	86.06	.11
PASS 1, COURSE B	5.50	-1.94	123.64	.14
PASS 2, COURSE A	5.50	2.10	80.52	.10
PASS 2, COURSE B	5.50	-1.96	123.21	.14
PASS 3, COURSE A	5.50	2.42	88.29	.12
PASS 3, COURSE B	5.50	-2.02	121.40	.15
PASS 4, COURSE A	5.50	2.43	88.44	.12
PASS 4, COURSE B	5.50	-1.96	123.48	.14
WASHBOARD COURSE	5.50	4.14	85.85	.21

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.18	97.97	.07
PASS 1, COURSE B	5.50	.86	91.83	.05
PASS 2, COURSE A	5.50	-1.05	101.65	.07
PASS 2, COURSE B	5.50	-.86	117.51	.06
PASS 3, COURSE A	5.50	1.18	93.04	.07
PASS 3, COURSE B	5.50	.93	91.69	.05
PASS 4, COURSE A	5.50	1.21	93.46	.07
PASS 4, COURSE B	5.50	.87	93.01	.05
WASHBOARD COURSE	5.50	1.92	86.72	.10

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.59	83.16	.07
PASS 1, COURSE B	5.50	1.09	105.24	.07
PASS 2, COURSE A	5.50	-1.48	109.88	.10
PASS 2, COURSE B	5.50	-1.10	126.76	.09
PASS 3, COURSE A	5.50	1.59	84.27	.08
PASS 3, COURSE B	5.50	-1.26	121.72	.09
PASS 4, COURSE A	5.50	1.64	87.26	.08
PASS 4, COURSE B	5.50	1.20	86.23	.06
WASHBOARD COURSE	5.50	2.59	86.97	.14

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.73	100.48	.10
PASS 1, COURSE B	5.50	1.19	90.61	.06
PASS 2, COURSE A	5.50	-1.55	103.95	.10
PASS 2, COURSE B	5.50	1.20	89.76	.06
PASS 3, COURSE A	5.50	1.77	93.72	.10
PASS 3, COURSE B	5.50	1.29	92.45	.07
PASS 4, COURSE A	5.50	1.80	95.34	.11
PASS 4, COURSE B	5.50	1.24	94.28	.07
WASHBOARD COURSE	5.50	2.66	90.12	.14

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.83	101.60	.11
PASS 1, COURSE B	5.50	-1.34	87.99	.07
PASS 2, COURSE A	5.50	1.69	100.89	.11
PASS 2, COURSE B	5.50	-1.31	91.84	.07
PASS 3, COURSE A	5.50	-1.88	94.53	.11
PASS 3, COURSE B	5.50	-1.43	91.57	.08
PASS 4, COURSE A	5.50	-1.92	96.02	.11
PASS 4, COURSE B	5.50	-1.39	92.86	.08
WASHBOARD COURSE	5.50	-2.93	88.32	.15

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.57	85.91	.08
PASS 1, COURSE B	5.50	-1.16	125.43	.09
PASS 2, COURSE A	5.50	-1.47	130.60	.11
PASS 2, COURSE B	5.50	-1.11	125.66	.09
PASS 3, COURSE A	5.50	1.56	89.00	.08
PASS 3, COURSE B	5.50	-1.28	122.27	.10
PASS 4, COURSE A	5.50	1.63	96.51	.09
PASS 4, COURSE B	5.50	-1.21	113.04	.08
WASHBOARD COURSE	5.50	2.56	90.80	.14

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.77	98.93	.11
PASS 1, COURSE B	5.50	-1.31	129.87	.09
PASS 2, COURSE A	5.50	1.62	111.89	.10
PASS 2, COURSE B	5.50	1.32	96.61	.07
PASS 3, COURSE A	5.50	1.78	95.32	.11
PASS 3, COURSE B	5.50	1.44	95.82	.08
PASS 4, COURSE A	5.50	1.83	95.34	.11
PASS 4, COURSE B	5.50	1.33	109.98	.08
WASHBOARD COURSE	5.50	2.82	89.07	.15

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.46	121.64	.11
PASS 1, COURSE B	5.50	.98	105.06	.06
PASS 2, COURSE A	5.50	-1.44	115.77	.10
PASS 2, COURSE B	5.50	.91	99.37	.05
PASS 3, COURSE A	5.50	1.43	111.20	.10
PASS 3, COURSE B	5.50	1.07	97.97	.06
PASS 4, COURSE A	5.50	1.46	113.11	.10
PASS 4, COURSE B	5.50	1.04	99.46	.06
WASHBOARD COURSE	5.50	2.08	97.10	.12

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.75	101.52	.10
PASS 1, COURSE B	5.50	-1.41	116.93	.10
PASS 2, COURSE A	5.50	1.62	108.33	.10
PASS 2, COURSE B	5.50	-1.46	116.86	.10
PASS 3, COURSE A	5.50	1.82	96.88	.11
PASS 3, COURSE B	5.50	1.45	117.51	.10
PASS 4, COURSE A	5.50	1.86	96.84	.11
PASS 4, COURSE B	5.50	1.41	112.58	.09
WASHBOARD COURSE	5.50	3.05	90.73	.16

ROAD TEST DATA

TEST NO. 3(b) DATE: 11 Sep 87

TEST SPECIMEN: Same as Test No. 3(a) except longitudinal forces measured.

PASS 1-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.45 SEC	5.29 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES	6.90 SEC	4.94 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES	6.75 SEC	5.05 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.45 SEC	5.29 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 6: LONGITUDINAL ACCELERATION FROM ROAD HAZARD TEST ON
(SOC ON CASTERS, LOCKED, BRACED, & ORIENTED)
(CROSSWISE ON 5-TON TRUCK) DATE: 09-11-86

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.75	64.34	.03
PASS 1, COURSE B	5.50	.77	69.96	.03
PASS 2, COURSE A	5.50	-.81	65.63	.03
PASS 2, COURSE B	5.50	.79	69.81	.03
PASS 3, COURSE A	5.50	-.77	65.21	.03
PASS 3, COURSE B	5.50	.77	71.33	.03
PASS 4, COURSE A	5.50	-.77	63.11	.03
PASS 4, COURSE B	5.50	.78	69.93	.03
WASHBOARD COURSE	5.50	.91	71.82	.04

TAPE CHANNEL 3 : LONGITUDINAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.35	66.62	.05
PASS 1, COURSE B	5.50	.87	68.75	.03
PASS 2, COURSE A	5.50	-1.20	66.41	.05
PASS 2, COURSE B	5.50	.83	68.78	.03
PASS 3, COURSE A	5.50	-1.34	66.26	.05
PASS 3, COURSE B	5.50	.82	69.08	.03
PASS 4, COURSE A	5.50	-1.30	67.17	.05
PASS 4, COURSE B	5.50	.83	67.51	.03
WASHBOARD COURSE	5.50	-1.17	71.16	.05

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.75	64.75	.03
PASS 1, COURSE B	5.50	-.77	70.59	.03
PASS 2, COURSE A	5.50	-.80	63.76	.03
PASS 2, COURSE B	5.50	-.77	68.80	.03
PASS 3, COURSE A	5.50	.79	64.20	.03
PASS 3, COURSE B	5.50	-.76	69.26	.03
PASS 4, COURSE A	5.50	-.76	64.48	.03
PASS 4, COURSE B	5.50	-.76	68.08	.03
WASHBOARD COURSE	5.50	-.96	71.61	.04

TAPE CHANNEL 5 : LONGITUDINAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.09	64.36	.04
PASS 1, COURSE B	5.50	-.70	68.88	.03
PASS 2, COURSE A	5.50	.97	65.42	.04
PASS 2, COURSE B	5.50	-.69	69.48	.03
PASS 3, COURSE A	5.50	1.07	65.67	.04
PASS 3, COURSE B	5.50	-.68	69.34	.03
PASS 4, COURSE A	5.50	1.05	65.77	.04
PASS 4, COURSE B	5.50	-.68	69.18	.03
WASHBOARD COURSE	5.50	.93	72.64	.04

TAPE CHANNEL 6 : LONGITUDINAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.23	94.67	.07
PASS 1, COURSE B	5.50	-1.04	81.53	.05
PASS 2, COURSE A	5.50	1.18	113.36	.08
PASS 2, COURSE B	5.50	-1.02	82.04	.05
PASS 3, COURSE A	5.50	1.21	112.91	.08
PASS 3, COURSE B	5.50	-1.03	82.81	.05
PASS 4, COURSE A	5.50	1.17	113.91	.08
PASS 4, COURSE B	5.50	-1.00	81.97	.05
WASHBOARD COURSE	5.50	-.44	60.73	.02

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.09	143.14	.09
PASS 1, COURSE B	5.50	.92	88.85	.05
PASS 2, COURSE A	5.50	1.11	132.79	.08
PASS 2, COURSE B	5.50	.85	89.14	.04
PASS 3, COURSE A	5.50	1.15	133.61	.09
PASS 3, COURSE B	5.50	.93	90.61	.05
PASS 4, COURSE A	5.50	1.11	134.65	.09
PASS 4, COURSE B	5.50	.87	89.77	.04
WASHBOARD COURSE	5.50	-.34	62.91	.01

TAPE CHANNEL 8 : LONGITUDINAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.18	123.16	.09
PASS 1, COURSE B	5.50	-.97	83.39	.05
PASS 2, COURSE A	5.50	1.18	122.54	.08
PASS 2, COURSE B	5.50	-.94	85.07	.05
PASS 3, COURSE A	5.50	1.23	122.43	.09
PASS 3, COURSE B	5.50	-.95	85.25	.05
PASS 4, COURSE A	5.50	-1.20	119.21	.08
PASS 4, COURSE B	5.50	-.92	85.82	.05
WASHBOARD COURSE	5.50	-.28	56.75	.01

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.81	151.12	.07
PASS 1, COURSE B	5.50	.60	121.97	.04
PASS 2, COURSE A	5.50	.80	153.66	.07
PASS 2, COURSE B	5.50	.61	120.78	.04
PASS 3, COURSE A	5.50	.82	152.25	.07
PASS 3, COURSE B	5.50	.58	118.22	.04
PASS 4, COURSE A	5.50	-.81	154.94	.07
PASS 4, COURSE B	5.50	.60	120.16	.04
WASHBOARD COURSE	5.50	-.15	55.58	.00

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.77	241.99	.06
PASS 1, COURSE B	5.50	.55	96.77	.03
PASS 2, COURSE A	5.50	.75	187.27	.07
PASS 2, COURSE B	5.50	-.55	110.32	.04
PASS 3, COURSE A	5.50	.76	237.34	.06
PASS 3, COURSE B	5.50	-.54	113.37	.04
PASS 4, COURSE A	5.50	.76	195.75	.06
PASS 4, COURSE B	5.50	-.54	111.77	.04
WASHBOARD COURSE	5.50	.19	56.52	.01

SYNOPSIS OF TEST NO. 4

In Test No. 4, the casters were removed from the SOC. The SOC was positioned crosswise on the M923 5-ton cargo truck and secured with a single web strap tiedown assembly from each of four tiedown/lift rings. An additional two web strap tiedown assemblies were used over the top of the SOC.

The SOC in the 5-ton cargo truck was driven over the road course twice. In the first complete test, the longitudinal forces were measured at designated internal and external SOC locations. In the second road test, vertical forces were measured at the identical locations.

An additional test was performed with wooden blocks positioned under the four corners of the SOC. This test was stopped after completing one-half of the first step of the road hazard course because the wooden blocks failed to remain under the corners of the SOC.

ROAD TEST DATA

TEST NO. 4(a) DATE: 12 Sep 86

TEST SPECIMEN: SOC with casters removed secured laterally on the M923 5-ton cargo truck. Longitudinal forces recorded. Total of six web strap tiedown assemblies used with one strap from each tiedown ring and two straps over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES	7.35 SEC	4.64 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.45 SEC	5.29 MPH

REMARKS: No movement

30 MILE ROAD TEST: No movement

PANIC STOP TEST: No movement

PASS 3-A OVER FIRST SERIES OF TIES	7.05 SEC	4.84 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.75 SEC	5.05 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 7: LONGITUDINAL ACCELERATION FROM ROAD HAZARD TEST ON
(SOC WITHOUT CASTERS, CROSSWISE ON 5-TON TRUCK)
DATE: 09-12-86

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.56	79.83	.03
PASS 1, COURSE B	5.50	.42	64.95	.02
PASS 2, COURSE A	5.50	-.52	80.70	.02
PASS 2, COURSE B	5.50	.41	64.63	.02
PASS 3, COURSE A	5.50	-.57	90.03	.03
PASS 3, COURSE B	5.50	.42	66.18	.02
PASS 4, COURSE A	5.50	-.57	83.20	.03
PASS 4, COURSE B	5.50	.41	68.31	.02
WASHBOARD COURSE	5.50	-.51	80.97	.02

TAPE CHANNEL 3 : LONGITUDINAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.61	91.82	.04
PASS 1, COURSE B	5.50	.44	99.65	.03
PASS 2, COURSE A	5.50	.65	77.10	.03
PASS 2, COURSE B	5.50	.47	87.49	.02
PASS 3, COURSE A	5.50	.57	76.38	.03
PASS 3, COURSE B	5.50	.46	80.27	.02
PASS 4, COURSE A	5.50	-.61	73.62	.03
PASS 4, COURSE B	5.50	.40	94.90	.02
WASHBOARD COURSE	5.50	.45	88.85	.02

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.57	81.16	.03
PASS 1, COURSE B	5.50	-.43	64.71	.02
PASS 2, COURSE A	5.50	.53	82.45	.03
PASS 2, COURSE B	5.50	-.43	70.60	.02
PASS 3, COURSE A	5.50	.49	84.67	.03
PASS 3, COURSE B	5.50	-.44	67.48	.02
PASS 4, COURSE A	5.50	.52	75.93	.02
PASS 4, COURSE B	5.50	-.41	64.21	.02
WASHBOARD COURSE	5.50	.47	62.89	.02

TAPE CHANNEL 5 : LONGITUDINAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.48	77.31	.02
PASS 1, COURSE B	5.50	-.37	98.89	.02
PASS 2, COURSE A	5.50	-.53	76.88	.02
PASS 2, COURSE B	5.50	-.39	88.35	.02
PASS 3, COURSE A	5.50	-.47	76.31	.02
PASS 3, COURSE B	5.50	-.38	89.64	.02
PASS 4, COURSE A	5.50	.55	73.03	.02
PASS 4, COURSE B	5.50	-.35	100.92	.02
WASHBOARD COURSE	5.50	-.50	88.13	.03

TAPE CHANNEL 6 : LONGITUDINAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.97	118.29	.07
PASS 1, COURSE B	5.50	-.78	125.69	.06
PASS 2, COURSE A	5.50	-.96	119.85	.07
PASS 2, COURSE B	5.50	-.75	127.59	.06
PASS 3, COURSE A	5.50	-1.01	123.95	.07
PASS 3, COURSE B	5.50	-.79	125.58	.06
PASS 4, COURSE A	5.50	-.99	119.58	.07
PASS 4, COURSE B	5.50	-.77	125.24	.06
WASHBOARD COURSE	5.50	-.41	94.62	.02

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.01	123.33	.07
PASS 1, COURSE B	5.50	.74	119.46	.05
PASS 2, COURSE A	5.50	1.06	141.23	.09
PASS 2, COURSE B	5.50	.75	126.78	.05
PASS 3, COURSE A	5.50	1.07	138.69	.09
PASS 3, COURSE B	5.50	.80	123.76	.06
PASS 4, COURSE A	5.50	1.06	145.41	.09
PASS 4, COURSE B	5.50	.80	127.48	.06
WASHBOARD COURSE	5.50	-.32	87.44	.02

TAPE CHANNEL 8 : LONGITUDINAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.97	151.16	.09
PASS 1, COURSE B	5.50	-.81	126.96	.06
PASS 2, COURSE A	5.50	.95	146.22	.08
PASS 2, COURSE B	5.50	-.77	128.78	.06
PASS 3, COURSE A	5.50	-1.05	131.27	.08
PASS 3, COURSE B	5.50	-.78	122.77	.06
PASS 4, COURSE A	5.50	-.98	129.40	.08
PASS 4, COURSE B	5.50	-.78	125.41	.06
WASHBOARD COURSE	5.50	-.40	89.60	.02

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.91	138.66	.08
PASS 1, COURSE B	5.50	.63	115.72	.04
PASS 2, COURSE A	5.50	.97	129.09	.07
PASS 2, COURSE B	5.50	.64	121.69	.05
PASS 3, COURSE A	5.50	-.99	140.38	.08
PASS 3, COURSE B	5.50	.68	115.95	.05
PASS 4, COURSE A	5.50	.98	135.17	.08
PASS 4, COURSE B	5.50	.70	118.85	.05
WASHBOARD COURSE	5.50	-.32	91.09	.02

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.98	146.19	.09
PASS 1, COURSE B	5.50	-.77	122.99	.06
PASS 2, COURSE A	5.50	.96	141.56	.08
PASS 2, COURSE B	5.50	-.76	127.18	.06
PASS 3, COURSE A	5.50	1.02	147.44	.09
PASS 3, COURSE B	5.50	-.78	125.18	.06
PASS 4, COURSE A	5.50	-.94	125.75	.07
PASS 4, COURSE B	5.50	-.77	95.18	.05
WASHBOARD COURSE	5.50	-.34	79.93	.02

ROAD TEST DATA

TEST NO. 4(b) DATE: 12 Sep 87

TEST SPECIMEN: Same as Test No. 4(a) except vertical forces measured.

PASS 1-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.60 SEC	5.17 MPH

REMARKS: No movement

WASHBOARD COURSE: No Movement

TEST 8: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC WITHOUT CASTERS, CROSSWISE ON 5-TON TRUCK)
DATE: 09-12-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.99	83.75	.10
PASS 1, COURSE B	5.50	-2.14	107.00	.13
PASS 2, COURSE A	5.50	-2.07	82.43	.10
PASS 2, COURSE B	5.50	-2.05	111.61	.14
PASS 3, COURSE A	5.50	-2.05	84.80	.10
PASS 3, COURSE B	5.50	-2.13	109.59	.14
PASS 4, COURSE A	5.50	-2.05	85.56	.10
PASS 4, COURSE B	5.50	-2.13	108.67	.14
WASHBOARD COURSE	5.50	3.70	84.08	.18

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.08	101.03	.06
PASS 1, COURSE B	5.50	-.92	100.49	.06
PASS 2, COURSE A	5.50	-1.06	99.13	.06
PASS 2, COURSE B	5.50	-.87	107.02	.06
PASS 3, COURSE A	5.50	-1.02	94.95	.06
PASS 3, COURSE B	5.50	-.90	114.51	.06
PASS 4, COURSE A	5.50	1.05	107.56	.06
PASS 4, COURSE B	5.50	-.92	109.44	.06
WASHBOARD COURSE	5.50	1.77	86.86	.09

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.43	95.76	.08
PASS 1, COURSE B	5.50	-1.15	122.40	.08
PASS 2, COURSE A	5.50	-1.49	93.46	.08
PASS 2, COURSE B	5.50	-1.05	131.57	.08
PASS 3, COURSE A	5.50	-1.51	95.12	.08
PASS 3, COURSE B	5.50	-1.15	136.84	.08
PASS 4, COURSE A	5.50	-1.49	94.75	.09
PASS 4, COURSE B	5.50	-1.16	135.96	.08
WASHBOARD COURSE	5.50	2.27	88.04	.12

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.63	98.82	.10
PASS 1, COURSE B	5.50	-1.15	108.60	.08
PASS 2, COURSE A	5.50	-1.55	100.65	.09
PASS 2, COURSE B	5.50	1.11	106.25	.07
PASS 3, COURSE A	5.50	-1.57	96.72	.09
PASS 3, COURSE B	5.50	1.14	97.38	.06
PASS 4, COURSE A	5.50	1.59	109.31	.09
PASS 4, COURSE B	5.50	-1.15	117.79	.08
WASHBOARD COURSE	5.50	2.38	89.39	.12

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.81	96.93	.11
PASS 1, COURSE B	5.50	1.36	107.60	.09
PASS 2, COURSE A	5.50	1.70	94.58	.10
PASS 2, COURSE B	5.50	1.30	116.31	.09
PASS 3, COURSE A	5.50	1.72	96.46	.10
PASS 3, COURSE B	5.50	1.31	123.86	.09
PASS 4, COURSE A	5.50	-1.73	108.27	.11
PASS 4, COURSE B	5.50	1.37	115.90	.09
WASHBOARD COURSE	5.50	-2.62	88.72	.13

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.51	108.88	.10
PASS 1, COURSE B	5.50	-1.14	136.82	.09
PASS 2, COURSE A	5.50	-1.55	106.12	.10
PASS 2, COURSE B	5.50	-1.09	146.46	.08
PASS 3, COURSE A	5.50	-1.53	107.81	.10
PASS 3, COURSE B	5.50	-1.13	143.29	.08
PASS 4, COURSE A	5.50	-1.55	108.52	.10
PASS 4, COURSE B	5.50	-1.12	145.40	.08
WASHBOARD COURSE	5.50	2.28	92.89	.12

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.56	103.07	.10
PASS 1, COURSE B	5.50	-1.51	116.89	.10
PASS 2, COURSE A	5.50	-1.53	102.42	.10
PASS 2, COURSE B	5.50	-1.46	107.44	.09
PASS 3, COURSE A	5.50	1.49	119.82	.10
PASS 3, COURSE B	5.50	-1.45	113.37	.10
PASS 4, COURSE A	5.50	1.57	112.16	.09
PASS 4, COURSE B	5.50	-1.44	107.30	.09
WASHBOARD COURSE	5.50	2.53	87.94	.13

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.39	118.80	.10
PASS 1, COURSE B	5.50	.92	81.91	.04
PASS 2, COURSE A	5.50	-1.41	115.62	.10
PASS 2, COURSE B	5.50	-.92	165.74	.06
PASS 3, COURSE A	5.50	-1.42	117.40	.10
PASS 3, COURSE B	5.50	-.95	128.23	.08
PASS 4, COURSE A	5.50	-1.42	116.26	.10
PASS 4, COURSE B	5.50	-.93	130.32	.08
WASHBOARD COURSE	5.50	2.06	95.18	.12

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.66	104.01	.10
PASS 1, COURSE B	5.50	-1.59	106.28	.10
PASS 2, COURSE A	5.50	-1.62	100.84	.10
PASS 2, COURSE B	5.50	-1.56	114.26	.11
PASS 3, COURSE A	5.50	-1.60	103.24	.10
PASS 3, COURSE B	5.50	-1.62	112.05	.11
PASS 4, COURSE A	5.50	-1.64	105.45	.10
PASS 4, COURSE B	5.50	-1.68	109.75	.11
WASHBOARD COURSE	5.50	2.78	89.32	.15

ROAD TEST DATA

TEST NO. 4(c) DATE: 12 Sep 86

TEST SPECIMEN: Same as Test No. 4(b) except wooden blocks were placed under the four corners of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES	6.45 SEC	5.29 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.45 SEC	5.29 MPH

REMARKS: Wooden blocks positioned under corners of the SOC moved away from the SOC during test. Test stopped.

PASS 2-A OVER FIRST SERIES OF TIES	SEC	MPH
PASS 2-B OVER SECOND SERIES OF TIES	SEC	MPH

REMARKS:

30 MILE ROAD TEST

PANIC STOP TEST

PASS 3-A OVER FIRST SERIES OF TIES	SEC	MPH
PASS 3-B OVER SECOND SERIES OF TIES	SEC	MPH

REMARKS

PASS 4-A OVER FIRST SERIES OF TIES	SEC	MPH
PASS 4-B OVER SECOND SERIES OF TIES	SEC	MPH

REMARKS

WASHBOARD COURSE

TEST 8A: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC WITHOUT CASTERS WITH WOODEN BLOCKS UNDER CORNERS)
(LENGTHWISE ON 5-TON TRUCK) DATE: 09-12-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.63	95.22	.09
PASS 1, COURSE B	5.50	-1.20	128.88	.09

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.03	91.50	.05
PASS 1, COURSE B	5.50	-1.01	107.51	.07

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.48	107.42	.09
PASS 1, COURSE B	5.50	.97	96.19	.06

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.70	103.36	.10
PASS 1, COURSE B	5.50	-1.62	106.02	.10

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.73	97.62	.09
PASS 1, COURSE B	5.50	1.68	99.39	.10

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.59	114.73	.11
PASS 1, COURSE B	5.50	1.00	112.65	.07

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.42	89.57	.08
PASS 1, COURSE B	5.50	-1.52	112.41	.10

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.64	107.03	.11
PASS 1, COURSE B	5.50	1.00	104.52	.07

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.51	93.95	.08
PASS 1, COURSE B	5.50	-1.53	115.40	.11

SYNOPSIS OF TEST NO. 5

In Test No. 5, the SOC on solid rubber casters was positioned lengthwise on the M871 semitrailer and the trailer pulled over the USADACS road hazard course with a 5-ton tractor. The casters were free to swivel and the brakes on the caster wheels were released.

In the first test a single web strap tiedown assembly was used off each of four tiedown/lifting rings in addition to two web strap tiedown assemblies which were used over the top of the SOC. Following completion of the first step in the USADACS five-step road hazard course, all web strap tiedown assemblies using the tiedown rings were loose. The SOC was moving six inches side-to-side on the deck of the M871 semitrailer. The test was stopped as the securement method had failed.

A retest was performed after adding a second web strap tiedown assembly from each of four tiedown/lifting rings. The SOC was road tested secured with the ten web strap tiedown assemblies. This securement method satisfied the test requirement and is an acceptable load. The vertical forces were measured at the previously designated internal and external locations on the SOC.

A second test, using the identical securement method was performed with the lateral forces being obtained.

A third test was performed with the casters locked and the brakes set on the wheels. The ten web strap tiedown assemblies were used to secure the SOC and lateral forces were measured at the designated locations.

ROAD TEST DATA

TEST NO. 5(a) DATE: 12 Sep 86

TEST SPECIMEN: SOC on casters secured longitudinally on the M871 semitrailer. Vertical forces recorded. Instrumentation data included with data in Test No. 5b). Total of six web strap tiedown assemblies used with one strap from each tiedown ring and two straps over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES	6.45 SEC	5.29 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: SOC moved 1/2 inch to the left. Left rear web strap slightly loose.

PASS 2-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: All straps from sling/tiedown rings loose. SOC moved six inches back and forth. FAILURE.

30 MILE ROAD TEST

PANIC STOP TEST

PASS 3-A OVER FIRST SERIES OF TIES	SEC	MPH
PASS 3-B OVER SECOND SERIES OF TIES	SEC	MPH

REMARKS

PASS 4-A OVER FIRST SERIES OF TIES	SEC	MPH
PASS 4-B OVER SECOND SERIES OF TIES	SEC	MPH

REMARKS

WASHBOARD COURSE

ROAD TEST DATA

TEST NO. 5(b) DATE: 12-13 Sep 86

TEST SPECIMEN: Same as Test 5(a), except an additional web strap tiedown assembly placed at each tiedown ring. A total of ten web strap tiedown assemblies used in the load.

PASS 1-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: Rear of SOC moved 1/2 inch to the right.

PASS 2-A OVER FIRST SERIES OF TIES	6.45 SEC	5.29 MPH
PASS 2-B OVER SECOND SERIES OF TIES	10.00 SEC	5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: No movement

PANIC STOP TEST: No movement

PASS 3-A OVER FIRST SERIES OF TIES	6.15 SEC	5.54 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.15 SEC	5.54 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: Right front strap slightly loose.

WASHBOARD COURSE: Right front strap loose; appeared to wrap on ratchet turned slightly.

TEST 9: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC ON CASTERS, LENGTHWISE ON M871 TRAILER)
DATE: 09-12-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	4.25	68.33	.16
PASS 1, COURSE B	5.50	3.17	56.20	.10
PASS 2, COURSE A	5.50	4.18	70.91	.16
PASS 2, COURSE B	5.50	2.82	78.59	.13
PASS 3, COURSE A	5.50	2.85	79.17	.13
PASS 3, COURSE B	5.50	2.85	79.35	.13
PASS 4, COURSE A	5.50	3.89	71.52	.16
PASS 4, COURSE B	5.50	2.81	68.95	.11
PASS 5, COURSE A	5.50	3.95	71.43	.16
PASS 5, COURSE B	5.50	2.86	68.40	.11
PASS 6, COURSE A	5.50	3.87	72.97	.17
PASS 6, COURSE B	5.50	3.00	63.41	.11
WASHBOARD COURSE	5.50	3.16	69.17	.13

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.24	73.83	.09
PASS 1, COURSE B	5.50	1.83	67.47	.07
PASS 2, COURSE A	5.50	2.20	73.76	.10
PASS 2, COURSE B	5.50	1.87	70.45	.08
PASS 3, COURSE A	5.50	1.89	70.97	.08
PASS 3, COURSE B	5.50	1.89	71.00	.08
PASS 4, COURSE A	5.50	2.20	72.76	.09
PASS 4, COURSE B	5.50	1.82	67.87	.07
PASS 5, COURSE A	5.50	2.20	73.25	.09
PASS 5, COURSE B	5.50	1.84	67.85	.07
PASS 6, COURSE A	5.50	2.23	73.23	.10
PASS 6, COURSE B	5.50	1.85	67.28	.07
WASHBOARD COURSE	5.50	2.10	72.16	.09

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.22	67.89	.13
PASS 1, COURSE B	5.50	2.98	60.45	.10
PASS 2, COURSE A	5.50	3.49	57.07	.12
PASS 2, COURSE B	5.50	2.96	56.76	.09
PASS 3, COURSE A	5.50	2.99	57.29	.09
PASS 3, COURSE B	5.50	2.98	57.19	.09
PASS 4, COURSE A	5.50	2.71	75.49	.11
PASS 4, COURSE B	5.50	2.48	66.07	.09
PASS 5, COURSE A	5.50	2.70	65.01	.10
PASS 5, COURSE B	5.50	2.45	66.65	.09
PASS 6, COURSE A	5.50	2.86	74.26	.12
PASS 6, COURSE B	5.50	2.52	66.34	.10
WASHBOARD COURSE	5.50	2.64	69.06	.10

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.23	74.52	.15
PASS 1, COURSE B	5.50	3.21	64.67	.12
PASS 2, COURSE A	5.50	3.33	69.49	.13
PASS 2, COURSE B	5.50	3.31	63.05	.12
PASS 3, COURSE A	5.50	3.33	63.35	.12
PASS 3, COURSE B	5.50	3.34	63.53	.12
PASS 4, COURSE A	5.50	3.29	74.37	.15
PASS 4, COURSE B	5.50	2.95	67.09	.11
PASS 5, COURSE A	5.50	3.29	75.29	.15
PASS 5, COURSE B	5.50	2.90	66.80	.11
PASS 6, COURSE A	5.50	3.42	73.92	.14
PASS 6, COURSE B	5.50	2.93	66.70	.11
WASHBOARD COURSE	5.50	3.29	71.95	.14

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-3.58	77.56	.16
PASS 1, COURSE B	5.50	-3.17	66.83	.12
PASS 2, COURSE A	5.50	-3.41	74.38	.14
PASS 2, COURSE B	5.50	-3.24	66.53	.12
PASS 3, COURSE A	5.50	-3.23	66.29	.12
PASS 3, COURSE B	5.50	-3.18	65.56	.12
PASS 4, COURSE A	5.50	-3.50	73.35	.15
PASS 4, COURSE B	5.50	-3.01	67.10	.11
PASS 5, COURSE A	5.50	-3.57	73.55	.15
PASS 5, COURSE B	5.50	-2.99	66.49	.11
PASS 6, COURSE A	5.50	-3.65	74.00	.15
PASS 6, COURSE B	5.50	-3.02	66.89	.11
WASHBOARD COURSE	5.50	-3.45	71.66	.15

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.26	71.68	.14
PASS 1, COURSE B	5.50	2.79	66.41	.11
PASS 2, COURSE A	5.50	3.43	61.47	.12
PASS 2, COURSE B	5.50	2.74	60.29	.10
PASS 3, COURSE A	5.50	2.80	61.38	.10
PASS 3, COURSE B	5.50	2.87	62.55	.10
PASS 4, COURSE A	5.50	2.67	81.46	.12
PASS 4, COURSE B	5.50	2.43	71.48	.10
PASS 5, COURSE A	5.50	2.73	73.57	.11
PASS 5, COURSE B	5.50	2.38	70.88	.10
PASS 6, COURSE A	5.50	2.78	79.80	.13
PASS 6, COURSE B	5.50	2.41	70.54	.10
WASHBOARD COURSE	5.50	2.52	74.23	.11

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.37	72.86	.14
PASS 1, COURSE B	5.50	2.40	63.31	.08
PASS 2, COURSE A	5.50	3.21	75.55	.15
PASS 2, COURSE B	5.50	2.35	79.85	.11
PASS 3, COURSE A	5.50	2.41	81.18	.12
PASS 3, COURSE B	5.50	2.47	82.23	.12
PASS 4, COURSE A	5.50	3.00	73.11	.13
PASS 4, COURSE B	5.50	2.36	62.70	.08
PASS 5, COURSE A	5.50	2.98	73.39	.13
PASS 5, COURSE B	5.50	2.27	69.30	.09
PASS 6, COURSE A	5.50	3.03	76.39	.14
PASS 6, COURSE B	5.50	2.44	63.57	.09
WASHBOARD COURSE	5.50	2.71	74.05	.11

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.19	74.45	.13
PASS 1, COURSE B	5.50	2.54	69.83	.10
PASS 2, COURSE A	5.50	3.22	84.01	.16
PASS 2, COURSE B	5.50	2.34	62.63	.08
PASS 3, COURSE A	5.50	2.41	64.18	.09
PASS 3, COURSE B	5.50	2.50	65.90	.09
PASS 4, COURSE A	5.50	2.72	86.16	.15
PASS 4, COURSE B	5.50	2.42	72.65	.10
PASS 5, COURSE A	5.50	2.80	87.48	.15
PASS 5, COURSE B	5.50	2.41	72.57	.10
PASS 6, COURSE A	5.50	2.83	88.43	.16
PASS 6, COURSE B	5.50	2.44	72.78	.10
WASHBOARD COURSE	5.50	2.42	75.84	.10

ROAD TEST DATA

TEST NO. 5(c) DATE: 13 Sep 87

TEST SPECIMEN: Same as Test No. 5(b) except lateral forces measured.

PASS 1-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES	6.15 SEC	5.54 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES	6.15 SEC	5.54 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 10: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC ON CASTERS, LENGTHWISE ON M871 TRAILER)
DATE: 09-13-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.60	122.14	.11
PASS 1, COURSE B	5.50	-1.78	78.94	.08
PASS 2, COURSE A	5.50	-1.51	116.71	.11
PASS 2, COURSE B	5.50	-1.76	78.77	.08
PASS 3, COURSE A	5.50	-1.57	121.55	.11
PASS 3, COURSE B	5.50	-1.77	78.87	.08
PASS 4, COURSE A	5.50	1.62	63.92	.06
PASS 4, COURSE B	5.50	-1.75	78.74	.08
WASHBOARD COURSE	5.50	.37	92.96	.02

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.22	81.71	.12
PASS 1, COURSE B	5.50	2.10	85.18	.11
PASS 2, COURSE A	5.50	2.21	73.18	.10
PASS 2, COURSE B	5.50	2.10	85.12	.10
PASS 3, COURSE A	5.50	2.29	76.64	.12
PASS 3, COURSE B	5.50	2.08	84.74	.11
PASS 4, COURSE A	5.50	2.40	80.96	.12
PASS 4, COURSE B	5.50	2.09	83.60	.10
WASHBOARD COURSE	5.50	-.41	85.39	.02

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.50	121.72	.11
PASS 1, COURSE B	5.50	1.71	77.40	.08
PASS 2, COURSE A	5.50	1.51	74.80	.06
PASS 2, COURSE B	5.50	1.76	77.87	.08
PASS 3, COURSE A	5.50	1.44	113.57	.10
PASS 3, COURSE B	5.50	1.74	78.68	.08
PASS 4, COURSE A	5.50	-1.68	64.35	.06
PASS 4, COURSE B	5.50	1.72	77.85	.08
WASHBOARD COURSE	5.50	-.36	103.73	.02

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.83	77.82	.09
PASS 1, COURSE B	5.50	-1.74	84.74	.09
PASS 2, COURSE A	5.50	-1.85	74.76	.09
PASS 2, COURSE B	5.50	-1.74	83.02	.08
PASS 3, COURSE A	5.50	-2.00	78.22	.10
PASS 3, COURSE B	5.50	-1.73	84.52	.08
PASS 4, COURSE A	5.50	-2.00	79.32	.10
PASS 4, COURSE B	5.50	-1.75	82.90	.09
WASHBOARD COURSE	5.50	.36	84.80	.02

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.95	70.90	.09
PASS 1, COURSE B	5.50	1.83	84.29	.09
PASS 2, COURSE A	5.50	1.99	66.02	.08
PASS 2, COURSE B	5.50	1.80	83.49	.08
PASS 3, COURSE A	5.50	2.15	69.82	.10
PASS 3, COURSE B	5.50	1.80	83.36	.09
PASS 4, COURSE A	5.50	2.20	70.84	.09
PASS 4, COURSE B	5.50	1.79	82.05	.09
WASHBOARD COURSE	5.50	-.34	83.78	.02

TAPE CHANNEL 7 : LATERAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.76	120.88	.12
PASS 1, COURSE B	5.50	1.90	81.09	.09
PASS 2, COURSE A	5.50	1.67	112.74	.11
PASS 2, COURSE B	5.50	1.87	80.76	.09
PASS 3, COURSE A	5.50	1.73	116.62	.12
PASS 3, COURSE B	5.50	1.88	80.30	.09
PASS 4, COURSE A	5.50	1.75	127.62	.13
PASS 4, COURSE B	5.50	1.84	80.45	.09
WASHBOARD COURSE	5.50	-.36	97.39	.02

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.54	87.13	.09
PASS 1, COURSE B	5.50	-1.38	86.24	.07
PASS 2, COURSE A	5.50	-1.52	81.62	.08
PASS 2, COURSE B	5.50	-1.30	81.91	.06
PASS 3, COURSE A	5.50	-1.64	85.67	.09
PASS 3, COURSE B	5.50	-1.46	90.23	.08
PASS 4, COURSE A	5.50	-1.58	84.15	.08
PASS 4, COURSE B	5.50	-1.50	87.01	.08
WASHBOARD COURSE	5.50	-.39	163.63	.04

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.08	279.55	.00
PASS 1, COURSE B	5.50	-.87	133.00	.07
PASS 2, COURSE A	5.50	-1.10	164.23	.11
PASS 2, COURSE B	5.50	-.84	136.34	.07
PASS 3, COURSE A	5.50	-1.10	165.81	.11
PASS 3, COURSE B	5.50	-.89	144.89	.08
PASS 4, COURSE A	5.50	-1.10	177.76	.12
PASS 4, COURSE B	5.50	-.87	137.16	.07
WASHBOARD COURSE	5.50	.28	127.49	.02

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.05	129.97	.08
PASS 1, COURSE B	5.50	.87	139.43	.07
PASS 2, COURSE A	5.50	-1.03	139.78	.09
PASS 2, COURSE B	5.50	.86	167.97	.07
PASS 3, COURSE A	5.50	-1.03	160.96	.09
PASS 3, COURSE B	5.50	.83	135.28	.07
PASS 4, COURSE A	5.50	-1.04	176.47	.09
PASS 4, COURSE B	5.50	.85	154.70	.07
WASHBOARD COURSE	5.50	-.25	107.15	.02

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.41	69.57	.14
PASS 1, COURSE B	5.50	2.20	62.57	.08
PASS 2, COURSE A	5.50	3.01	78.63	.14
PASS 2, COURSE B	5.50	2.18	83.96	.10
PASS 3, COURSE A	5.50	3.24	74.92	.15
PASS 3, COURSE B	5.50	2.31	70.04	.09
PASS 4, COURSE A	5.50	3.23	75.96	.15
PASS 4, COURSE B	5.50	2.26	71.93	.09
PASS 5, COURSE A	5.50	3.20	74.16	.14
PASS 5, COURSE B	5.50	2.31	71.22	.09
PASS 6, COURSE A	5.50	3.20	76.15	.15
PASS 6, COURSE B	5.50	2.41	61.18	.09
WASHBOARD COURSE	5.50	2.57	80.29	.12

ROAD TEST DATA

TEST NO. 5(d) DATE: 13 Sep 86

TEST SPECIMEN: Same as Test No 5(c) except the casters were locked and the brakes set on the wheels.

PASS 1-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES	6.15 SEC	5.54 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 10A: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC ON LOCKED CASTERS, LENGTHWISE ON M871 TRAILER)
DATE: 09-13-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.79	82.96	.09
PASS 1, COURSE B	5.50	-1.60	79.91	.07
PASS 2, COURSE A	5.50	-1.86	86.86	.09
PASS 2, COURSE B	5.50	-1.61	79.48	.08
PASS 3, COURSE A	5.50	-1.78	86.23	.09
PASS 3, COURSE B	5.50	-1.60	80.73	.08
PASS 4, COURSE A	5.50	-1.76	75.61	.08
PASS 4, COURSE B	5.50	-1.59	79.27	.07
WASHBOARD COURSE	5.50	.54	90.64	.02

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.12	77.67	.11
PASS 1, COURSE B	5.50	2.06	85.69	.10
PASS 2, COURSE A	5.50	2.41	81.99	.13
PASS 2, COURSE B	5.50	2.07	85.37	.10
PASS 3, COURSE A	5.50	2.19	81.79	.12
PASS 3, COURSE B	5.50	2.04	86.94	.10
PASS 4, COURSE A	5.50	2.10	88.04	.12
PASS 4, COURSE B	5.50	2.06	87.01	.10
WASHBOARD COURSE	5.50	.52	135.96	.04

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.76	80.57	.08
PASS 1, COURSE B	5.50	1.59	79.91	.08
PASS 2, COURSE A	5.50	1.88	84.08	.09
PASS 2, COURSE B	5.50	1.62	80.51	.08
PASS 3, COURSE A	5.50	1.72	81.02	.08
PASS 3, COURSE B	5.50	1.59	80.42	.08
PASS 4, COURSE A	5.50	1.82	71.84	.08
PASS 4, COURSE B	5.50	1.59	78.60	.07
WASHBOARD COURSE	5.50	.61	135.96	.04

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.79	77.83	.09
PASS 1, COURSE B	5.50	-1.73	84.27	.08
PASS 2, COURSE A	5.50	-2.04	83.52	.11
PASS 2, COURSE B	5.50	-1.73	83.48	.08
PASS 3, COURSE A	5.50	-1.90	80.12	.10
PASS 3, COURSE B	5.50	-1.70	85.62	.08
PASS 4, COURSE A	5.50	-1.79	86.85	.10
PASS 4, COURSE B	5.50	-1.72	85.82	.08
WASHBOARD COURSE	5.50	.56	181.28	.03

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.95	70.38	.09
PASS 1, COURSE B	5.50	1.76	85.38	.09
PASS 2, COURSE A	5.50	2.17	73.41	.10
PASS 2, COURSE B	5.50	1.75	84.65	.09
PASS 3, COURSE A	5.50	4.97	70.61	.25
PASS 3, COURSE B	5.50	1.73	86.54	.09
PASS 4, COURSE A	5.50	1.90	77.01	.10
PASS 4, COURSE B	5.50	1.73	86.36	.09
WASHBOARD COURSE	5.50	.41	135.96	.03

TAPE CHANNEL 7 : LATERAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.90	87.95	.10
PASS 1, COURSE B	5.50	1.65	83.71	.08
PASS 2, COURSE A	5.50	1.97	91.99	.11
PASS 2, COURSE B	5.50	1.66	83.23	.08
PASS 3, COURSE A	5.50	1.86	90.74	.10
PASS 3, COURSE B	5.50	1.65	83.94	.08
PASS 4, COURSE A	5.50	1.78	80.22	.08
PASS 4, COURSE B	5.50	1.66	82.44	.08
WASHBOARD COURSE	5.50	.45	135.96	.02

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.48	87.52	.09
PASS 1, COURSE B	5.50	-1.38	88.60	.07
PASS 2, COURSE A	5.50	-1.53	90.89	.09
PASS 2, COURSE B	5.50	-1.41	90.12	.08
PASS 3, COURSE A	5.50	-1.52	92.56	.09
PASS 3, COURSE B	5.50	-1.26	87.11	.07
PASS 4, COURSE A	5.50	-1.45	103.24	.09
PASS 4, COURSE B	5.50	-1.37	87.57	.07
WASHBOARD COURSE	5.50	.64	181.28	.05

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

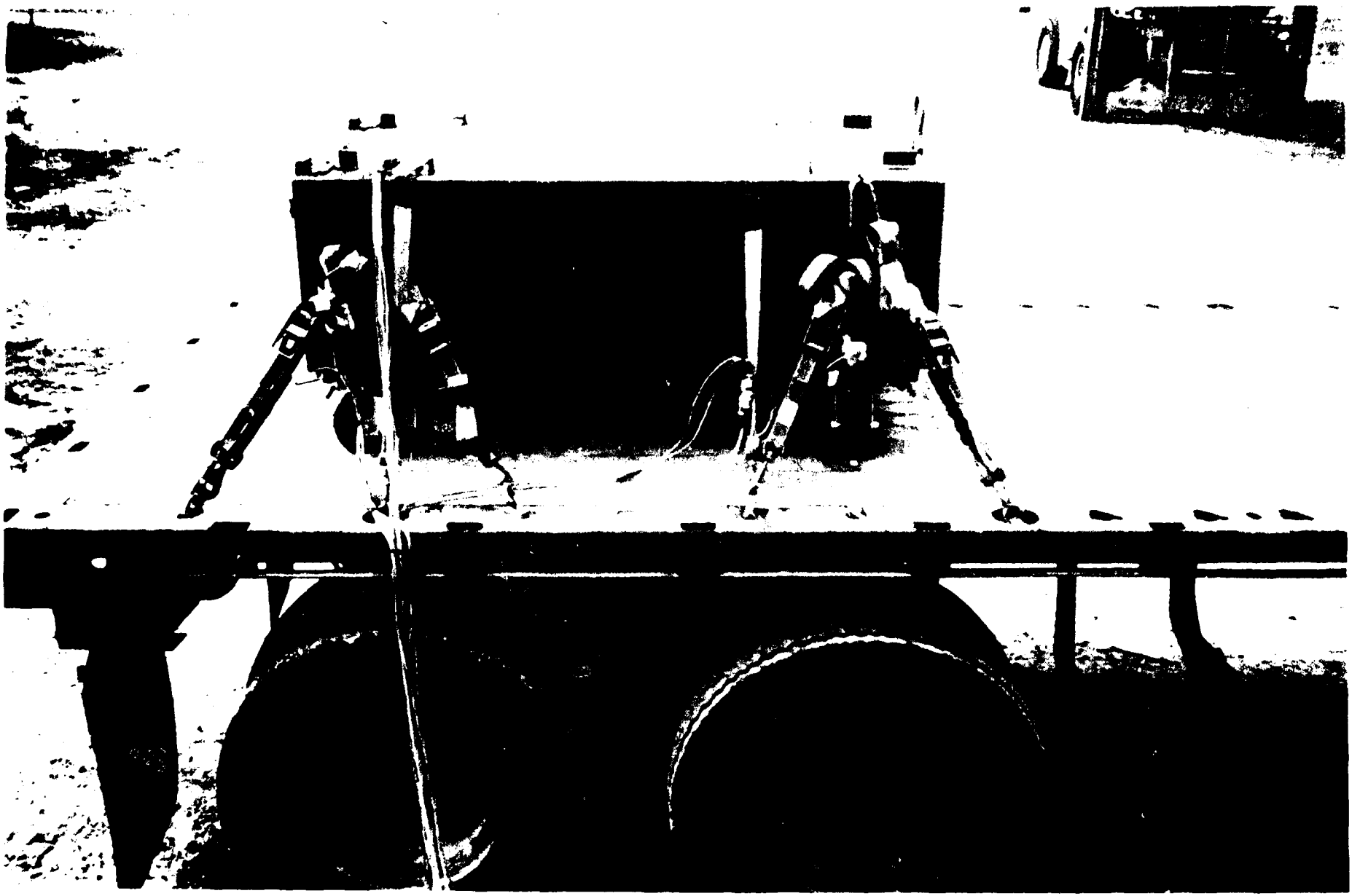
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.10	157.46	.11
PASS 1, COURSE B	5.50	-.88	141.05	.08
PASS 2, COURSE A	5.50	-1.12	156.32	.11
PASS 2, COURSE B	5.50	-.88	145.79	.08
PASS 3, COURSE A	5.50	-1.13	154.55	.11
PASS 3, COURSE B	5.50	-.88	136.50	.07
PASS 4, COURSE A	5.50	-1.12	150.84	.11
PASS 4, COURSE B	5.50	-.87	143.97	.07
WASHBOARD COURSE	5.50	.26	135.96	.02

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.03	143.17	.09
PASS 1, COURSE B	5.50	.88	139.95	.07
PASS 2, COURSE A	5.50	-1.09	153.25	.09
PASS 2, COURSE B	5.50	.87	141.40	.07
PASS 3, COURSE A	5.50	1.03	141.84	.09
PASS 3, COURSE B	5.50	.89	141.84	.08
PASS 4, COURSE A	5.50	1.01	141.10	.09
PASS 4, COURSE B	5.50	.85	139.44	.07
WASHBOARD COURSE	5.50	.28	181.28	.01

	DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL	

Photo 12. View of the SOC on casters positioned lengthwise on the M871 semitrailer. Securement method shown using six web strap tiedown assemblies failed.



	DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL	

Photo 13. View of the SOC on casters positioned lengthwise on the M871 semitrailer. Ten web strap tiedown assemblies shown provided adequate securement.

DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 14. View of the SOC on the M871 semitrailer and the adjacent truck transporting the instrumentation package.

DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 15. View of the accelerometers located on the side of the SOC and on the deck of the M871 semitrailer.

SYNOPSIS OF TEST NO. 6

In Test No. 6, the casters were removed from the SOC. The SOC was positioned lengthwise on the M871 semitrailer and secured with a single web strap tiedown assembly from each of four tiedown/lift rings. An additional two web strap tiedown assemblies were used over the top of the SOC.

The test load on the semitrailer completed the road hazard course twice. In the first complete test, the lateral forces were measured at designated internal and external SOC locations. In the second test, vertical forces were measured at the identical locations.

Both securement methods passed the test requirements.

ROAD TEST DATA

TEST NO. 6(a) DATE: 13 Sep 86

TEST SPECIMEN: SOC with castors removed secured longitudinally on M871. Lateral forces measured. Total six web strap tiedown assemblies used with one strap from each tiedown ring and two over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES	6.15 SEC	5.54 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.25 SEC	5.54 MPH

REMARKS: SOC moved 1/4 inch forward and 1/2 inch to the left.

PASS 2-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: No change

30 MILE ROAD TEST: SOC moved 1/4 inch forward.

PANIC STOP TEST: No change

PASS 3-A OVER FIRST SERIES OF TIES	6.60 SEC	5.17 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: All four corner straps appeared to slightly stretch.

PASS 4-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: No change

WASHBOARD COURSE: Two web straps on left side are loose. The strap appeared to slip on the take-up spool.

TEST 11: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC WITHOUT CASTERS, LENGTHWISE ON M871 TRAILER)
DATE: 09-13-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.54	116.57	.10
PASS 1, COURSE B	5.50	1.00	323.32	.13
PASS 2, COURSE A	5.50	-1.44	106.90	.09
PASS 2, COURSE B	5.50	-1.21	89.30	.07
PASS 3, COURSE A	5.50	-1.46	122.24	.10
PASS 3, COURSE B	5.50	-.99	96.39	.06
PASS 4, COURSE A	5.50	-1.37	113.49	.09
PASS 4, COURSE B	5.50	-1.10	95.54	.06
WASHBOARD COURSE	5.50	-1.32	110.74	.09

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.03	100.03	.12
PASS 1, COURSE B	5.50	1.41	101.12	.10
PASS 2, COURSE A	5.50	2.00	106.81	.12
PASS 2, COURSE B	5.50	1.97	82.95	.10
PASS 3, COURSE A	5.50	2.08	98.52	.12
PASS 3, COURSE B	5.50	1.48	98.13	.09
PASS 4, COURSE A	5.50	1.90	97.26	.11
PASS 4, COURSE B	5.50	1.80	90.04	.10
WASHBOARD COURSE	5.50	1.67	95.94	.10

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.39	109.10	.09
PASS 1, COURSE B	5.50	-1.08	196.47	.12
PASS 2, COURSE A	5.50	1.35	105.80	.08
PASS 2, COURSE B	5.50	1.20	86.69	.06
PASS 3, COURSE A	5.50	1.33	122.81	.09
PASS 3, COURSE B	5.50	.96	94.70	.06
PASS 4, COURSE A	5.50	1.30	112.76	.09
PASS 4, COURSE B	5.50	1.11	97.09	.07
WASHBOARD COURSE	5.50	1.24	106.02	.08

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.60	103.62	.09
PASS 1, COURSE B	5.50	-1.20	100.19	.08
PASS 2, COURSE A	5.50	-1.66	100.44	.09
PASS 2, COURSE B	5.50	-1.58	82.12	.08
PASS 3, COURSE A	5.50	-1.71	99.50	.10
PASS 3, COURSE B	5.50	-1.26	98.32	.08
PASS 4, COURSE A	5.50	-1.63	100.96	.09
PASS 4, COURSE B	5.50	-1.40	88.27	.07
WASHBOARD COURSE	5.50	-1.37	98.02	.08

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.66	94.22	.09
PASS 1, COURSE B	5.50	1.26	101.06	.08
PASS 2, COURSE A	5.50	1.76	93.06	.09
PASS 2, COURSE B	5.50	1.66	80.50	.08
PASS 3, COURSE A	5.50	1.74	92.99	.10
PASS 3, COURSE B	5.50	1.21	100.49	.08
PASS 4, COURSE A	5.50	1.67	90.75	.09
PASS 4, COURSE B	5.50	1.49	85.96	.08
WASHBOARD COURSE	5.50	1.39	95.63	.08

TAPE CHANNEL 7 : LATERAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.55	124.68	.11
PASS 1, COURSE B	5.50	-1.12	171.49	.12
PASS 2, COURSE A	5.50	1.54	110.91	.10
PASS 2, COURSE B	5.50	1.28	96.25	.07
PASS 3, COURSE A	5.50	1.50	128.68	.11
PASS 3, COURSE B	5.50	1.04	101.61	.07
PASS 4, COURSE A	5.50	1.42	115.10	.10
PASS 4, COURSE B	5.50	1.16	100.05	.07
WASHBOARD COURSE	5.50	1.36	122.18	.10

TAPE CHANNEL 8 : LATERAL ACCELERATION ON LEFT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.41	114.29	.09
PASS 1, COURSE B	5.50	1.03	126.76	.07
PASS 2, COURSE A	5.50	-1.45	110.20	.09
PASS 2, COURSE B	5.50	-1.35	91.89	.08
PASS 3, COURSE A	5.50	-1.50	104.76	.09
PASS 3, COURSE B	5.50	-1.01	100.33	.06
PASS 4, COURSE A	5.50	-1.35	107.54	.08
PASS 4, COURSE B	5.50	-1.16	91.11	.06
WASHBOARD COURSE	5.50	-1.25	111.85	.08

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.15	120.15	.09
PASS 1, COURSE B	5.50	1.06	106.80	.07
PASS 2, COURSE A	5.50	-1.15	149.58	.11
PASS 2, COURSE B	5.50	-.89	84.95	.05
PASS 3, COURSE A	5.50	1.18	120.30	.09
PASS 3, COURSE B	5.50	.95	105.14	.06
PASS 4, COURSE A	5.50	1.14	118.19	.08
PASS 4, COURSE B	5.50	-.93	84.94	.05
WASHBOARD COURSE	5.50	1.11	121.54	.08

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.13	148.44	.10
PASS 1, COURSE B	5.50	-1.03	108.45	.07
PASS 2, COURSE A	5.50	1.11	134.53	.09
PASS 2, COURSE B	5.50	.85	86.40	.05
PASS 3, COURSE A	5.50	-1.15	152.02	.10
PASS 3, COURSE B	5.50	-.94	110.34	.07
PASS 4, COURSE A	5.50	-1.07	145.19	.09
PASS 4, COURSE B	5.50	.87	84.90	.05
WASHBOARD COURSE	5.50	-1.01	151.66	.07

ROAD TEST DATA

TEST NO. 6(b) DATE: 13 Sep 86

TEST SPECIMEN: Same as Test No. 6(a), except vertical forces measured.

PASS 1-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 12: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC WITHOUT CASTERS, LENGTHWISE ON M871 TRAILER)
DATE: 09-10-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.69	68.76	.14
PASS 1, COURSE B	5.50	2.75	66.66	.10
PASS 2, COURSE A	5.50	3.56	68.06	.14
PASS 2, COURSE B	5.50	2.79	66.79	.11
PASS 3, COURSE A	5.50	3.71	70.10	.15
PASS 3, COURSE B	5.50	3.20	74.41	.13
PASS 4, COURSE A	5.50	3.69	69.71	.14
PASS 4, COURSE B	5.50	2.78	66.78	.11
WASHBOARD COURSE	5.50	1.82	65.77	.07

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.11	67.91	.09
PASS 1, COURSE B	5.50	1.78	66.95	.06
PASS 2, COURSE A	5.50	2.09	67.35	.08
PASS 2, COURSE B	5.50	1.81	67.31	.07
PASS 3, COURSE A	5.50	2.08	72.20	.08
PASS 3, COURSE B	5.50	1.98	72.35	.08
PASS 4, COURSE A	5.50	2.04	71.52	.09
PASS 4, COURSE B	5.50	1.83	67.29	.07
WASHBOARD COURSE	5.50	1.31	61.21	.05

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.93	66.73	.11
PASS 1, COURSE B	5.50	2.31	70.18	.09
PASS 2, COURSE A	5.50	3.10	66.32	.12
PASS 2, COURSE B	5.50	2.35	70.04	.10
PASS 3, COURSE A	5.50	2.82	80.12	.13
PASS 3, COURSE B	5.50	2.74	68.17	.11
PASS 4, COURSE A	5.50	2.88	79.01	.13
PASS 4, COURSE B	5.50	2.32	70.05	.09
WASHBOARD COURSE	5.50	1.56	65.29	.06

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.37	68.50	.13
PASS 1, COURSE B	5.50	2.93	68.68	.12
PASS 2, COURSE A	5.50	3.59	68.44	.14
PASS 2, COURSE B	5.50	2.90	68.50	.12
PASS 3, COURSE A	5.50	3.22	68.56	.12
PASS 3, COURSE B	5.50	3.24	69.02	.13
PASS 4, COURSE A	5.50	3.29	69.90	.14
PASS 4, COURSE B	5.50	2.95	69.23	.12
WASHBOARD COURSE	5.50	2.13	59.67	.07

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-3.47	68.26	.13
PASS 1, COURSE B	5.50	-3.05	68.21	.12
PASS 2, COURSE A	5.50	-3.62	70.65	.14
PASS 2, COURSE B	5.50	-3.02	67.68	.12
PASS 3, COURSE A	5.50	-3.27	72.61	.13
PASS 3, COURSE B	5.50	-3.29	72.84	.13
PASS 4, COURSE A	5.50	-3.30	73.76	.14
PASS 4, COURSE B	5.50	-3.05	68.53	.12
WASHBOARD COURSE	5.50	-2.16	59.05	.07

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.84	70.64	.12
PASS 1, COURSE B	5.50	2.37	74.72	.11
PASS 2, COURSE A	5.50	3.05	71.07	.13
PASS 2, COURSE B	5.50	2.40	74.90	.10
PASS 3, COURSE A	5.50	2.88	84.15	.14
PASS 3, COURSE B	5.50	2.78	71.51	.11
PASS 4, COURSE A	5.50	2.94	82.92	.15
PASS 4, COURSE B	5.50	2.33	73.96	.10
WASHBOARD COURSE	5.50	1.42	60.82	.05

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON LEFT OUTSIDE OF SOC

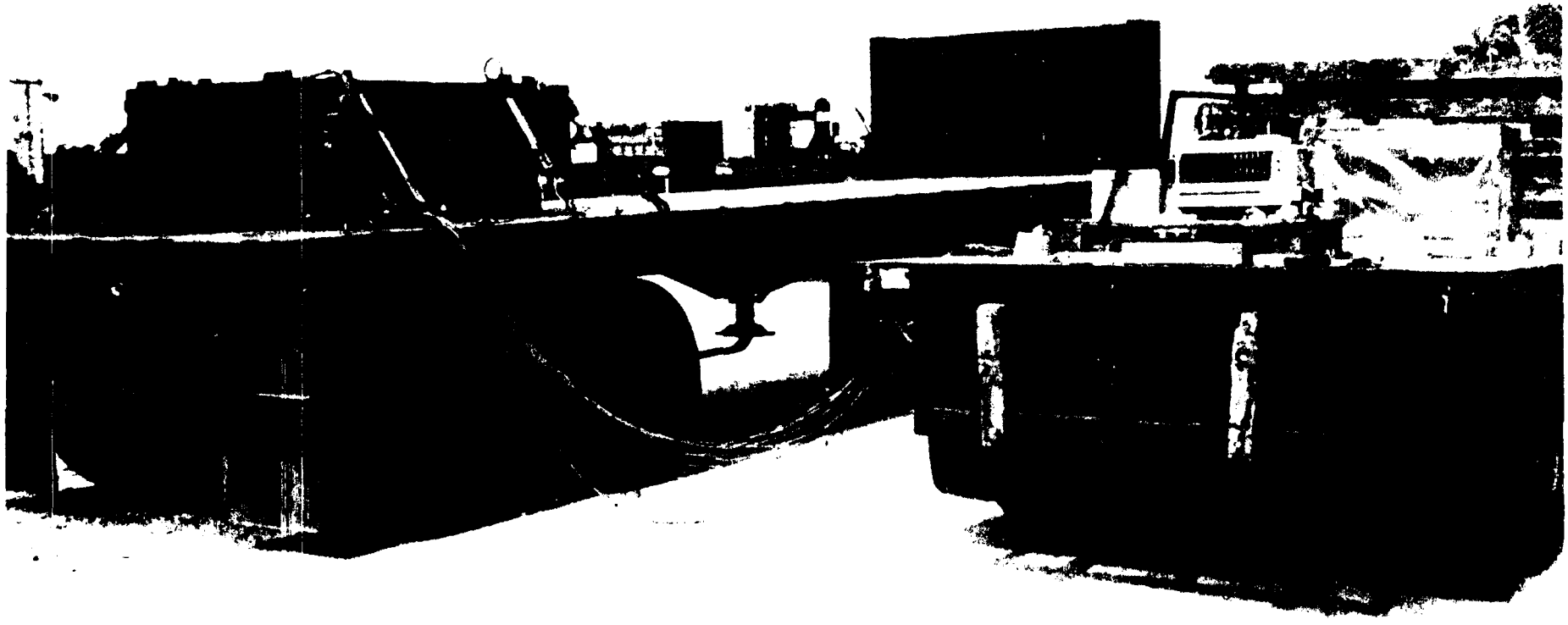
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.87	71.32	.12
PASS 1, COURSE B	5.50	2.37	69.75	.10
PASS 2, COURSE A	5.50	2.85	71.02	.11
PASS 2, COURSE B	5.50	2.37	68.74	.09
PASS 3, COURSE A	5.50	2.85	71.22	.12
PASS 3, COURSE B	5.50	2.53	76.13	.11
PASS 4, COURSE A	5.50	2.90	71.87	.12
PASS 4, COURSE B	5.50	2.30	67.80	.09
WASHBOARD COURSE	5.50	1.72	61.64	.06

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.06	69.01	.12
PASS 1, COURSE B	5.50	2.45	76.03	.11
PASS 2, COURSE A	5.50	3.25	68.49	.13
PASS 2, COURSE B	5.50	2.50	75.94	.11
PASS 3, COURSE A	5.50	3.12	80.88	.15
PASS 3, COURSE B	5.50	2.85	69.75	.11
PASS 4, COURSE A	5.50	3.15	84.44	.16
PASS 4, COURSE B	5.50	2.39	74.64	.10
WASHBOARD COURSE	5.50	1.50	67.21	.06

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.33	68.89	.13
PASS 1, COURSE B	5.50	2.41	68.30	.09
PASS 2, COURSE A	5.50	3.14	68.99	.12
PASS 2, COURSE B	5.50	2.47	68.74	.10
PASS 3, COURSE A	5.50	3.31	69.91	.14
PASS 3, COURSE B	5.50	2.45	67.88	.10
PASS 4, COURSE A	5.50	3.33	70.43	.14
PASS 4, COURSE B	5.50	2.43	68.30	.09
WASHBOARD COURSE	5.50	1.82	63.33	.07



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 16. View of the SOC on the M871 semitrailer, and the instrumentation package on an accompanying truck.

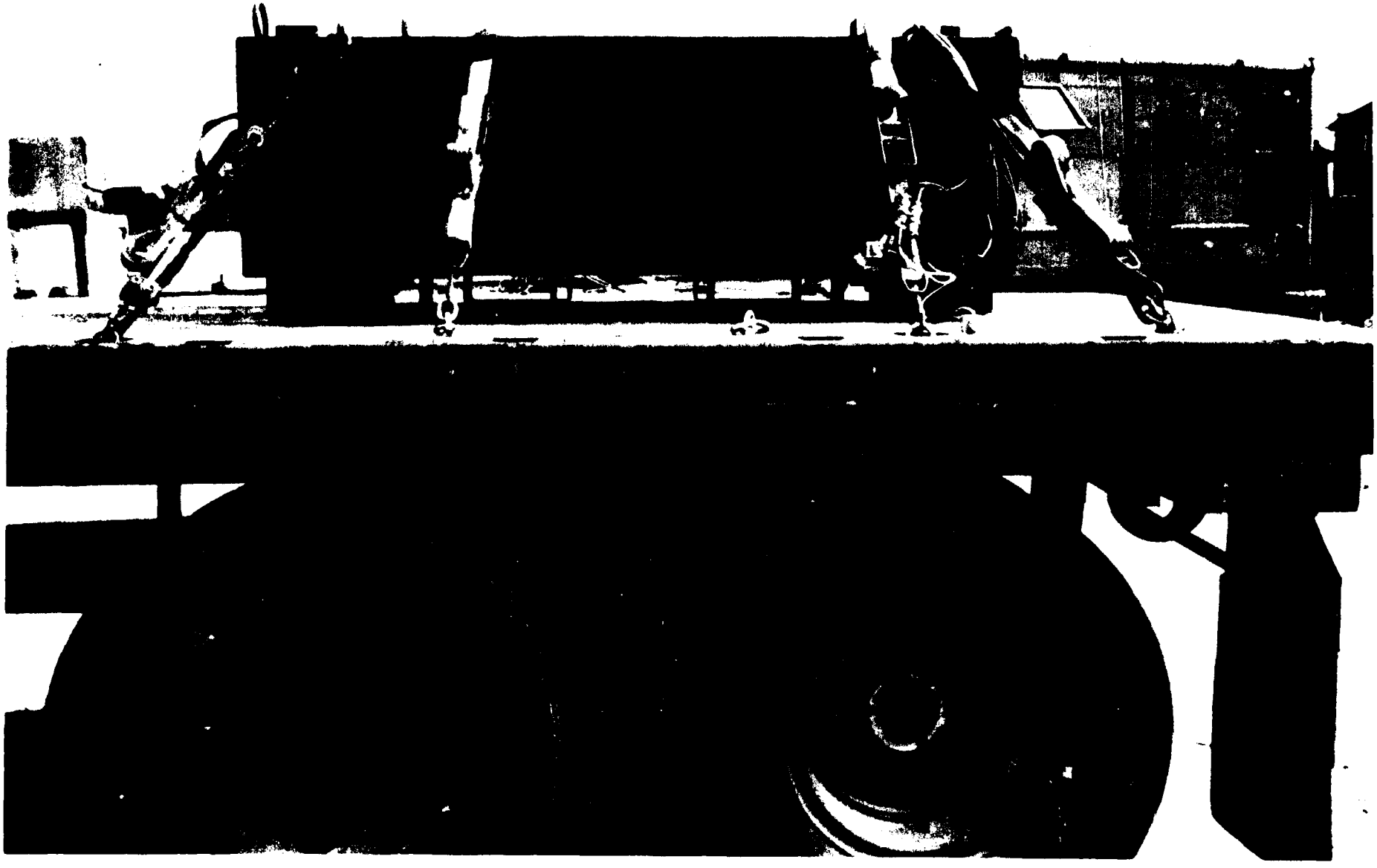


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Photo 17. View of the SOC securement method used on the M871 semitrailer.

SYNOPSIS OF TEST NO. 7

In Test No. 7, the SOC on solid rubber casters was positioned crosswise on the M871 semitrailer and the trailer was pulled over the USADACS road hazard course with a 5-ton tractor. The casters of the SOC were unlocked and the brakes on the wheels were released.

The SOC, in this configuration, was first tested to collect vertical forces and the test was duplicated to collect lateral forces.

Securement method passed the test requirements.

ROAD TEST DATA

TEST NO. 7(a) DATE: 14 Sep 86

TEST SPECIMEN: SOC on unlocked casters secured crosswise on M871 semitrailer. Vertical forces measured. Total of six web strap tiedown assemblies were used with one strap from each tiedown ring and two straps over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES	6.45 SEC	5.29 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: SOC one inch forward and moving side-to-side three inches.

PASS 2-A OVER FIRST SERIES OF TIES	6.45 SEC	5.29 MPH
PASS 2-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: Two corner straps slightly loose due to webbing being compacted on take-up spool.

30 MILE ROAD TEST: No change

PANIC STOP TEST: No change

PASS 3-A OVER FIRST SERIES OF TIES	6.45 SEC	5.29 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.15 SEC	5.54 MPH

REMARKS: Right rear strap loose due to slip on take-up spool. SOC moved forward one inch.

PASS 4-A OVER FIRST SERIES OF TIES	6.30 SEC	5.41 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: Both rear web straps loose. SOC moving side-to-side four to five inches.

WASHBOARD COURSE: No change

TEST 13: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC ON CASTERS, CROSSWISE ON M871 TRAILER)
DATE: 09-14-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	5.42	69.51	.21
PASS 1, COURSE B	5.50	3.87	72.31	.16
PASS 2, COURSE A	5.50	5.88	70.27	.24
PASS 2, COURSE B	5.50	3.84	71.86	.16
PASS 3, COURSE A	5.50	5.92	68.84	.24
PASS 3, COURSE B	5.50	3.78	71.61	.16
PASS 4, COURSE A	5.50	5.88	70.81	.24
PASS 4, COURSE B	5.50	3.82	71.01	.15
WASHBOARD COURSE	5.50	4.87	76.44	.21

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.58	76.37	.11
PASS 1, COURSE B	5.50	2.20	65.96	.08
PASS 2, COURSE A	5.50	2.43	67.53	.09
PASS 2, COURSE B	5.50	2.22	66.81	.08
PASS 3, COURSE A	5.50	2.56	73.15	.11
PASS 3, COURSE B	5.50	2.23	66.60	.09
PASS 4, COURSE A	5.50	2.68	68.28	.11
PASS 4, COURSE B	5.50	2.15	65.88	.08
WASHBOARD COURSE	5.50	2.23	75.40	.09

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.78	68.83	.15
PASS 1, COURSE B	5.50	2.62	75.44	.12
PASS 2, COURSE A	5.50	4.23	71.20	.17
PASS 2, COURSE B	5.50	2.59	73.43	.11
PASS 3, COURSE A	5.50	4.26	69.28	.17
PASS 3, COURSE B	5.50	2.51	72.71	.10
PASS 4, COURSE A	5.50	4.23	69.51	.17
PASS 4, COURSE B	5.50	2.54	71.62	.11
WASHBOARD COURSE	5.50	3.06	73.53	.12

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.90	76.06	.17
PASS 1, COURSE B	5.50	3.22	66.53	.11
PASS 2, COURSE A	5.50	3.58	66.80	.13
PASS 2, COURSE B	5.50	3.28	66.74	.12
PASS 3, COURSE A	5.50	3.79	72.71	.16
PASS 3, COURSE B	5.50	3.30	66.53	.13
PASS 4, COURSE A	5.50	3.91	67.39	.15
PASS 4, COURSE B	5.50	3.06	64.77	.11
WASHBOARD COURSE	5.50	3.16	73.38	.13

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-4.30	76.09	.18
PASS 1, COURSE B	5.50	-3.50	65.78	.14
PASS 2, COURSE A	5.50	-4.05	65.44	.15
PASS 2, COURSE B	5.50	-3.60	66.35	.14
PASS 3, COURSE A	5.50	-4.08	72.70	.17
PASS 3, COURSE B	5.50	-3.54	66.49	.14
PASS 4, COURSE A	5.50	-4.25	67.15	.16
PASS 4, COURSE B	5.50	-3.32	64.77	.12
WASHBOARD COURSE	5.50	-3.44	73.89	.14

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.63	73.98	.15
PASS 1, COURSE B	5.50	2.52	77.90	.11
PASS 2, COURSE A	5.50	4.00	75.01	.18
PASS 2, COURSE B	5.50	2.53	76.59	.11
PASS 3, COURSE A	5.50	4.07	73.06	.17
PASS 3, COURSE B	5.50	2.42	76.30	.11
PASS 4, COURSE A	5.50	4.09	73.58	.17
PASS 4, COURSE B	5.50	2.52	75.28	.10
WASHBOARD COURSE	5.50	2.94	76.00	.13

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.51	79.53	.16
PASS 1, COURSE B	5.50	2.94	69.63	.12
PASS 2, COURSE A	5.50	3.23	71.55	.13
PASS 2, COURSE B	5.50	2.98	69.38	.12
PASS 3, COURSE A	5.50	3.44	78.21	.16
PASS 3, COURSE B	5.50	2.97	69.40	.12
PASS 4, COURSE A	5.50	3.50	73.60	.14
PASS 4, COURSE B	5.50	2.87	69.24	.12
WASHBOARD COURSE	5.50	3.18	79.93	.14

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.16	75.36	.14
PASS 1, COURSE B	5.50	2.32	78.56	.11
PASS 2, COURSE A	5.50	3.52	77.34	.16
PASS 2, COURSE B	5.50	2.24	79.24	.11
PASS 3, COURSE A	5.50	3.52	77.24	.16
PASS 3, COURSE B	5.50	2.16	78.60	.10
PASS 4, COURSE A	5.50	3.53	77.09	.16
PASS 4, COURSE B	5.50	2.14	76.05	.09
WASHBOARD COURSE	5.50	2.49	77.88	.11

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.70	82.37	.17
PASS 1, COURSE B	5.50	2.86	71.48	.12
PASS 2, COURSE A	5.50	3.17	72.11	.13
PASS 2, COURSE B	5.50	2.94	72.00	.12
PASS 3, COURSE A	5.50	3.40	78.36	.15
PASS 3, COURSE B	5.50	2.88	72.61	.12
PASS 4, COURSE A	5.50	3.43	73.34	.15
PASS 4, COURSE B	5.50	2.76	69.90	.11
WASHBOARD COURSE	5.50	3.16	80.59	.14

ROAD TEST DATA

TEST NO. 7(b) DATE: 14 Sep 86

TEST SPECIMEN: Same as Test No. 7(a) except lateral forces measured.

PASS 1-A OVER FIRST SERIES OF TIES	6.00 SEC	5.68 MPH
PASS 1-B OVER SECOND SERIES OF TIES	6.45 SEC	5.29 MPH

REMARKS: SOC moved right 1/2 inch and rearward 1/2 inch.

PASS 2-A OVER FIRST SERIES OF TIES	6.15 SEC	5.54 MPH
PASS 2-B OVER SECOND SERIES OF TIES	5.85 SEC	5.83 MPH

REMARKS: Webbing on right rear strap has slipped 1/2 inch on take-up spool.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES	6.15 SEC	5.54 MPH
PASS 3-B OVER SECOND SERIES OF TIES	6.00 SEC	5.68 MPH

REMARKS: SOC moving side-to-side 3 to 4 inches.

PASS 4-A OVER FIRST SERIES OF TIES	6.15 SEC	5.54 MPH
PASS 4-B OVER SECOND SERIES OF TIES	6.30 SEC	5.41 MPH

REMARKS: Both rear straps loose.

WASHBOARD COURSE: Front left strap slipped 1/2 inch on take-up spool. SOC moving forward and rearward 6 inches.

TEST 14: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC
(SOC ON CASTERS, CROSSWISE ON M871 TRAILER)
DATE: 09-14-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.23	128.24	.18
PASS 1, COURSE B	5.50	2.22	127.96	.18
PASS 2, COURSE A	5.50	2.35	122.94	.18
PASS 2, COURSE B	5.50	-1.69	94.88	.10
PASS 3, COURSE A	5.50	2.36	113.41	.15
PASS 3, COURSE B	5.50	-2.32	99.08	.14
PASS 4, COURSE A	5.50	-2.33	75.65	.10
PASS 4, COURSE B	5.50	-2.40	97.52	.13
WASHBOARD COURSE	5.50	.84	100.74	.05

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-3.14	127.77	.25
PASS 1, COURSE B	5.50	*****	*****	*****
PASS 2, COURSE A	5.50	-3.24	124.03	.24
PASS 2, COURSE B	5.50	-2.35	78.22	.11
PASS 3, COURSE A	5.50	-3.27	113.88	.22
PASS 3, COURSE B	5.50	3.28	99.90	.19
PASS 4, COURSE A	5.50	-3.17	94.47	.17
PASS 4, COURSE B	5.50	3.32	98.46	.19
WASHBOARD COURSE	5.50	-1.43	117.78	.10

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.95	129.50	.15
PASS 1, COURSE B	5.50	-1.98	131.01	.16
PASS 2, COURSE A	5.50	-2.03	94.46	.11
PASS 2, COURSE B	5.50	-1.46	83.04	.07
PASS 3, COURSE A	5.50	-2.07	100.96	.12
PASS 3, COURSE B	5.50	2.11	100.95	.13
PASS 4, COURSE A	5.50	-2.08	95.11	.11
PASS 4, COURSE B	5.50	2.04	100.92	.12
WASHBOARD COURSE	5.50	.76	124.68	.06

TAPE CHANNEL 5 : LATERAL ACCELERATIN ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.70	129.21	.14
PASS 1, COURSE B	5.50	1.71	129.68	.14
PASS 2, COURSE A	5.50	1.68	92.52	.09
PASS 2, COURSE B	5.50	1.29	80.68	.06
PASS 3, COURSE A	5.50	1.70	118.10	.12
PASS 3, COURSE B	5.50	-1.77	100.23	.10
PASS 4, COURSE A	5.50	1.77	92.79	.09
PASS 4, COURSE B	5.50	-1.76	100.40	.10
WASHBOARD COURSE	5.50	.80	77.35	.04

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.80	125.84	.15
PASS 1, COURSE B	5.50	-1.84	94.73	.11
PASS 2, COURSE A	5.50	1.84	121.13	.14
PASS 2, COURSE B	5.50	1.47	76.34	.06
PASS 3, COURSE A	5.50	1.91	111.26	.12
PASS 3, COURSE B	5.50	-2.00	94.47	.11
PASS 4, COURSE A	5.50	1.95	87.14	.10
PASS 4, COURSE B	5.50	-2.02	92.26	.11
WASHBOARD COURSE	5.50	-.71	99.42	.04

TAPE CHANNEL 7 : LATERAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.86	133.70	.15
PASS 1, COURSE B	5.50	1.88	134.41	.15
PASS 2, COURSE A	5.50	1.84	97.02	.11
PASS 2, COURSE B	5.50	-1.38	99.77	.08
PASS 3, COURSE A	5.50	1.85	95.01	.10
PASS 3, COURSE B	5.50	-1.94	105.19	.12
PASS 4, COURSE A	5.50	1.89	97.98	.11
PASS 4, COURSE B	5.50	-1.90	106.59	.12
WASHBOARD COURSE	5.50	.79	128.38	.06

TAPE CHANNEL 8 : LATERAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.61	129.16	.13
PASS 1, COURSE B	5.50	1.61	129.01	.13
PASS 2, COURSE A	5.50	1.73	125.27	.13
PASS 2, COURSE B	5.50	-1.21	94.64	.07
PASS 3, COURSE A	5.50	1.70	112.91	.11
PASS 3, COURSE B	5.50	-1.61	99.30	.10
PASS 4, COURSE A	5.50	-1.66	75.20	.07
PASS 4, COURSE B	5.50	-1.68	98.80	.10
WASHBOARD COURSE	5.50	-.69	143.49	.06

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.09	174.46	.11
PASS 1, COURSE B	5.50	-1.05	169.01	.11
PASS 2, COURSE A	5.50	-1.00	223.53	.10
PASS 2, COURSE B	5.50	.69	84.28	.03
PASS 3, COURSE A	5.50	-.92	136.65	.07
PASS 3, COURSE B	5.50	-.72	80.77	.03
PASS 4, COURSE A	5.50	-.99	123.29	.07
PASS 4, COURSE B	5.50	-.66	83.03	.03
WASHBOARD COURSE	5.50	.39	129.00	.03

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.25	142.67	.11
PASS 1, COURSE B	5.50	-.83	124.75	.07
PASS 2, COURSE A	5.50	-1.11	152.82	.10
PASS 2, COURSE B	5.50	.81	82.82	.04
PASS 3, COURSE A	5.50	-1.03	125.90	.08
PASS 3, COURSE B	5.50	-.75	185.47	.06
PASS 4, COURSE A	5.50	-1.13	83.35	.05
PASS 4, COURSE B	5.50	-.74	74.25	.03
WASHBOARD COURSE	5.50	-.22	73.44	.01

NOTES:

*****: DATA NOT AVAILABLE.

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Photo 18. View of SOC on solid rubber casters positioned crosswise on the M871 semitrailer.

DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 19. View of SOC on casters positioned crosswise on M871 semitrailer showing securement procedure.

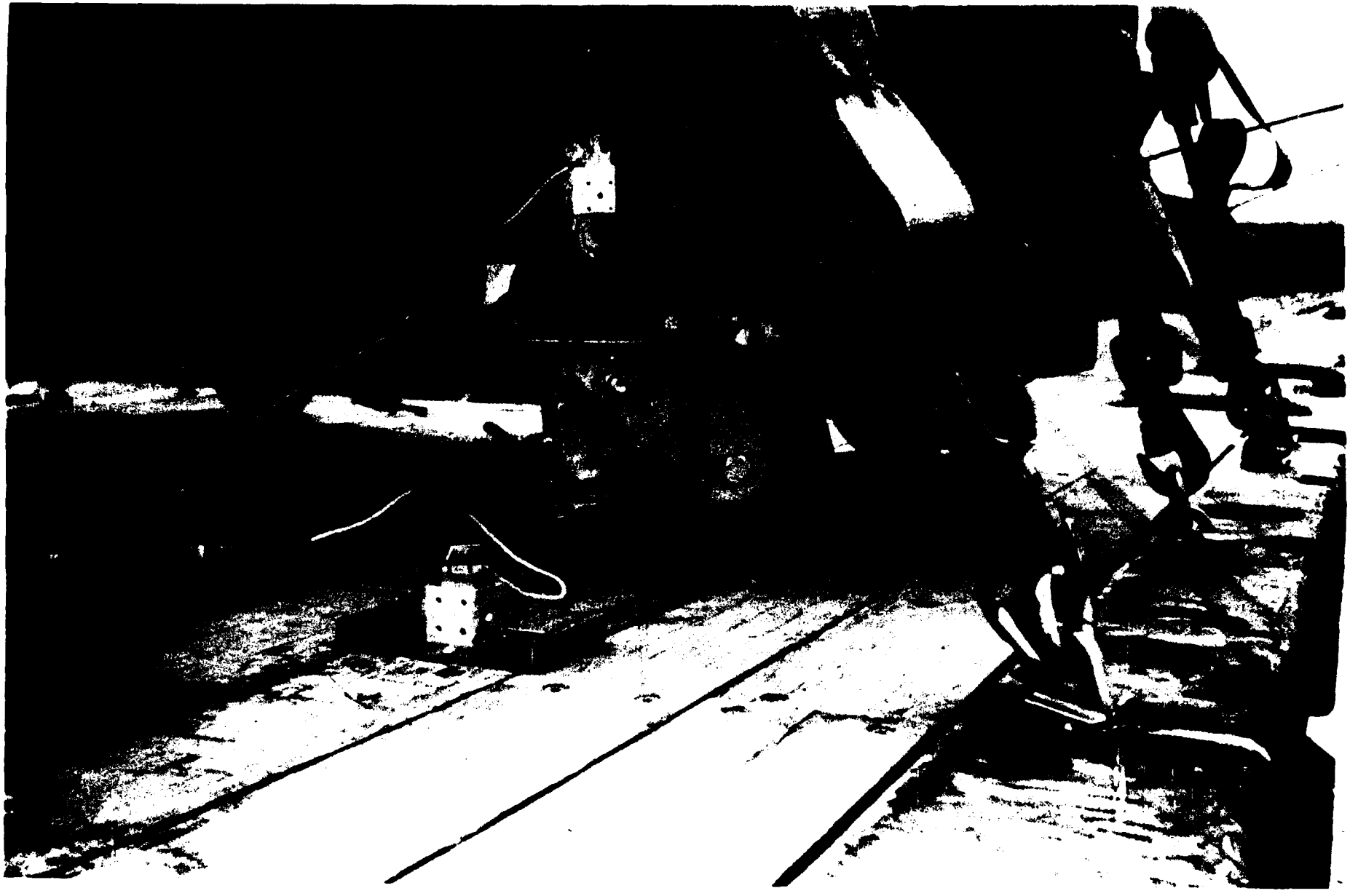

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Photo 20. View of accelerometers on side of SOC and on deck of M871 semitrailer.